FEB 24 1932

HYGEIA

The HEALTH MAGAZINE

PUBLISHED BY THE AMERICAN MEDICAL ASSOCIATION

March, 1932

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THE HEALTH MAGAZINE

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Edited by Morris Fishbein, M.D.

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Contributors to This Issue

DR. ROBERT A. KILDUFFE discusses hemophilia, the disease that made history and helped to overthrow the Czarist regime. . . . In an article based on a recent radio talk, which he gave for the department of hospitals of New York City, DR. MERVIN C. MYERSON tells of the perils of swallowing or inhaling foreign bodies, and how to avoid these dangers.

LT. COL. CALVIN GODDARD, director of the Scientific Crime Detection Laboratory of Chicago, who explains the methods of firearm identification, received early training as a physician. . . . SOLON R. BARBER, being in charge of the information service for the Food and Drug Administration of the United States Department of Agriculture, is well equipped to sound a note of warning against certain so-called headache remedies.

In the third chapter of "Lincoln and the Doctors," DR. MILTON H. SHUTES tells of the union of Abraham Lincoln, the introvert, and Mary Todd, the extrovert. . . . . DR. RACHEL ASH, an eastern pediatrician, gives some "do's" and "don'ts" to be followed while waiting for the doctor.

DR. BERNARD FANTUS, a professor and a practitioner of medicine, discusses the various functions of the therapist. . . . In his article on bacteriology, JOHN KOOPMAN conducts a tour of inspection of the "smallest farms in the world."

Under the auspices of the United Parents' Association of New York City, DR. SAMUEL ADAMS COHEN recently gave a radio talk pointing out the factors that influence the child's posture. His conclusions are summarized in this issue. . . . WILSON D. WALLIS of the University of Minnesota concludes his exposition of the evolution of food habits, which was begun in the February issue of HYGEIA.

DR. CLAUDE LILLINGSTON gives a timely portrayal of the life and work of Robert Koch who, fifty years ago (March 24, 1882), announced his discovery of the tubercle bacillus. . . . J. CLARENCE FUNK, director of the bureau of public health education in Harrisburg, presents rules of polite practices prevailing in the aristocracy of health.

GLADYS E. H. HOSMER, having met and overcome a serious problem in her own child's life, "passes the good word along" to other parents. . . . DR. J. B. McDOUGALL gives an inspiring view of the activities of tuberculous ex-soldiers in their own British village.

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Government Subsidies and Maternal Health

An Editorial

DURING the seven and a half years that the Sheppard-Towner Maternity and Infancy Act was in effect it cost the people of the United States about $11,000,000 in taxes. That act, placed in the law of the nation because both major political parties had included a plank in their platforms covering aid of this character, was probably developed in response to the constitutional amendment that granted women the right to vote. The legislation was promoted largely through the women's magazines with the idea that its passage would lower maternal morbidity and mortality rates, would lower infant mortality rates, would educate mothers in the necessity for prenatal and postnatal care and would even, as indeed some of its proponents promised, abolish pain in childbirth.

Since November, 1921, when the Sheppard-Towner Maternity and Infancy Act became effective, careful record has been kept of the statistics involved in these problems. The evidence available in official reports by the departments of the government and by various state and county health officials indicates that this act did not develop a single new idea in the field of maternal and infant hygiene. It did not accelerate the rate of decline in either the maternal or the infant death rates by even a fraction of a point per year. There is, in fact, plenty of evidence to indicate that the states that did not avail themselves of the provisions of the Sheppard-Towner Maternity and Infancy Act had rates as low and, in some instances, lower than those of states that did avail themselves of federal subsidies.

AN obvious instance is the report just made by the Medical Society of the County of Nassau in New York, which indicates that that county, for the last five years, has shown a better record than the rest of the state in each of the three figures; namely, stillbirths, maternal deaths and infant deaths. In analyzing the reason for the success of the county in these matters the report states:

> It isn't because we have been the subject of a million dollars' worth of demonstration, it isn't because the county has been flooded with free clinics for the past several years; in fact, less than 10 per cent of our prospective mothers ever see a prenatal clinic except as they are taken care of by their own physicians. . . . What explanation can there be except that 95 per cent of the deliveries in the county are done by physicians, that the county is fortunate enough to have a group of well trained, progressive, conscientious doctors and a population intelligent enough to take advantage of their opportunities?

Notwithstanding the complete failure of the proponents of the Sheppard-Towner legislation to prove the value of the experiment, notwithstanding the existence of plenty of evidence to indicate that the act failed to accomplish what it was supposed to accomplish, several bills have recently been introduced into Congress to authorize new subsidies for similar purposes. Each of these bills provides for annual appropriations to enable the federal government to make to subservient states certain basic grants of money. The combined federal and state funds are to be used for rural hygiene or for maternal and infant hygiene, or for both as the state elects, but only in accordance with such state-made plans as the federal board, which is established, finds acceptable. The bills begin with the provision of $2,000,000 annually and gradually work up to a total of $4,250,000 annually, at which figure apparently the federal subsidy will continue indefinitely.

THE American Medical Association officially condemned federal interference in the orderly administration of state hygiene on several occasions. It has been argued that such federalization exaggerates one type of health activity at the expense of others equally, if not more, important. Federal subsidies tend to destroy a local sense of responsibility for health activities. They deaden state initiative, they tend to wastefulness, they are promoted primarily by health officers who wish greater funds to control and thereby, perhaps, greater power or income for themselves.

The medical profession feels that the federal experiment in improving maternal and infant hygiene has been a failure. It does not wish to see a new experiment of the same type begun. It does not wish to see more money spent to a similar purpose. The times demand conservation of funds in order that taxation shall not become an imponderable burden. Notwithstanding the claims made by propagandists, American records in maternal care compare favorably with those of other civilized nations. If our records are to be still further improved, that improvement will depend on cooperation between the individual prospective mother and her own doctor.

Bleeders

UNFORTUNATE ARE THOSE BORN WITH THIS STRANGE DISEASE OF THE BLOOD

By Robert A. Kilduffe

Wide World

The last czar of Russia with his family, including the little czarevitch, whose hemophilia was of historical significance.

"THE bleeding disease" is not what it sounds like, a bit of cockney slang, but the expressive name given by its early describers to one of the most interesting of all blood diseases, a condition characterized by the tendency of those who suffer from it to have the most extraordinary—and even fatal—hemorrhages as a result of insignificant injuries.

For the same reason this disease was later named hemophilia from the Greek words hemo, blood, and philos, love—love of blood, and hence fondness for hemorrhage or bleeding.

Rasputin's Hold on Czar's Family

Both "hemophilia" and "the bleeding disease" thus express the same idea, the latter only in a more homely as well as a more picturesque fashion. Similarly, those who are afflicted with this condition are known as hemophiliacs, or bleeders.

Hemophilia is in many ways a most extraordinary disease. If imagination may be allowed a little leeway, it may even be credited with hastening the oncoming of the Russian Revolution, for if contemporary history is to be believed, the unusual influence of the Russian monk Rasputin over the psychopathic czar and his superstitious consort played no small part in hastening the downfall of the czarist régime.

Rasputin's influence was based on the belief, which he carefully fostered, that the life of the little czarevitch was closely bound with his own and that only he could restore him to perfect health—for this little lad, the heir to the throne of imperial Russia, was a hemophiliac.

While there are vague references in the Bible as well as in Hebrew literature to obscure hemorrhagic conditions that may or may not have been hemophilia, the first fairly clear reference to the disease is encountered in the year 1107 in the writings of Albucasis, an Arabian physician.

The first clear-cut recognition of the disease and the first description of its peculiarities was published in 1803 by Dr. John Otto of Philadelphia. Since that time, although much has been written about it, only within relatively recent times has there been any understanding of the manner in which its manifestations are brought about.

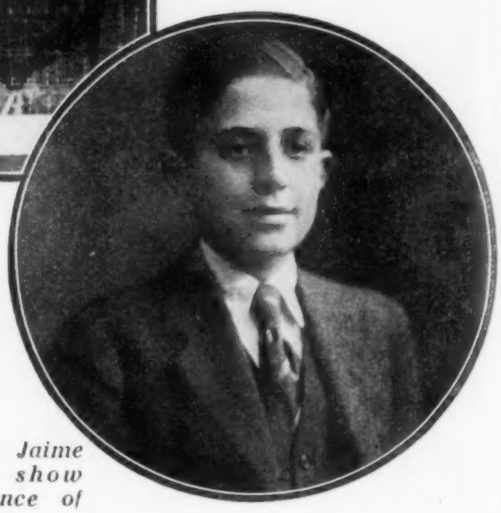
Even Trivial Injuries Often Fatal

The first striking characteristic of hemophilia, and the one from which it derives its name, is the prolonged and excessive hemorrhage following trivial injury. Even after so slight a thing as a little scratch or a tiny cut or the pulling of a tooth, the bleeding may be so constant, so steady and so prolonged that the patient becomes greatly weakened and may even be in danger of death.

The hemorrhage is not necessarily sudden or massive as far as the immediate loss of blood is concerned, but there is rather a slow, steady ooze that continues for hours or even days so that it has been said that "the blood drips from a wound as it would from a blood-soaked sponge."

The prince of Asturias, oldest son of the erstwhile king of Spain, is a hemophiliac and could never have inherited the crown.

Wide World



Prince Don Jaime is said to show some evidence of the taint.

It is quite easily seen, therefore, that the hemophiliac child is not likely to reach adult life, because in advanced cases the bleeding may occur under the skin or into the body cavities or tissues without the presence of an actual wound; it may occur after so slight an injury as the pressure of the clothes on the skin.

The second striking characteristic of hemophilia is that it occurs only in males and only in males of the white race, especially Germans.

The third and perhaps the most extraordinary feature of the disease is that it is, as has been said, "the most hereditary of all hereditary disease." It has been traced, for example, for as long as two hundred years in a single family so that, once established, it is never eradicated until the family becomes extinct. Even in the method of its hereditary transmission the disease is peculiar in that, while it affects the males, it is transmitted through the females who are, for this reason, called conductors.

Daughters Carry the Disease

A hemophiliac, for example, marries a normal woman. His sons may or may not be bleeders—usually they are not—but the disease will inevitably appear in the next generation; for the sons of his daughters will be hemophiliacs even though their father is a normal man in whose family tree there is no history of the disease, and although their mother is free from any sign or symptom of it.

What is the mechanism of hemophilia and how may its manifestations be explained? The probable answer to these questions has become possible only by a long series of studies both of the disease itself and of the mechanism underlying certain phenomena pertaining to the blood.

To understand hemophilia one must understand also the phenomena of coagulation. When, following an injury, there is a flow of blood from the damaged tissue, under normal conditions a series of events occur whereby the liberated blood is converted into a sticky, gelatinous and finally solid mass that plugs the torn vessels and stops the bleeding. These phenomena constitute the process of blood coagulation, a normal protective reaction of the body against hemorrhage.

Coagulation is a complicated process that calls into play a correlated mechanism utilizing various materials all of which are present in the blood in an inactive, latent form until called on to play their part in the reaction to injury.

It will be remembered that blood consists of a fluid portion, the plasma, in which are floating the formed elements, the red blood cells, the white blood cells and little bodies known as thrombocytes, or blood platelets. When hemorrhage occurs all these constituents of the blood are liberated.

The first event to occur in the process of coagulation is that the blood platelets become sticky and adhere to the injured tissue surface, to one another, to neighboring white blood cells —in fact, to whatever is near by including even the agent that has produced the damage if it still remains in place as, for example, a splinter or some other foreign body.

How Coagulation Takes Place

As they adhere the blood platelets liberate a ferment, prothrombin, which combined with the calcium in the plasma, forms what is known as thrombin. The thrombin then combines with another agent called fibrinogen, and the result of this combination is the formation of fibrin, which appears as little strands or fibrils that soon form a fine network.

As more blood platelets are caught in the meshes of this network, the same process occurs in greater and greater volume until a semi-

gelatinous mass, called the clot, is formed; eventually the clot contracts and so brings the torn surfaces together or plugs the damaged vessel.

While all the elements necessary for coagulation are present at all times in the circulating blood and while the first step, the mobilization of the blood platelets, may under various circumstances occur within the body or even here and there within the blood vessels, coagulation of the blood never occurs within the circulation because the reaction between prothrombin and calcium, which is essential to clot formation, is prevented by the presence in the circulation of a ferment derived from the liver. The thrombin ferment liberated by the blood platelets when hemorrhage occurs neutralizes the anticlotting ferment of the liver and so coagulation takes place.

Clotting Power Not Entirely Lacking

The tendency to hemorrhage, this characteristic of "the bleeding disease," is obvious evidence that the coagulation mechanism is at fault. That it is not totally lacking, however, is shown by the fact that clotting does take place eventually, although not for hours or even days, but that the mechanism is seriously disturbed is shown by two outstanding observations; first, that clot formation is slow, and, second, that the clot when it is formed shows practically no tendency to contract or become solid.

Examinations of the blood in hemophiliacs show that there is a normal supply of calcium, the blood platelets are normal in number, and there is no deficiency in the amount of fibrinogen present, nor is there any increase in the quantity of the anticlotting ferment of the liver.

The only significant variation that distinguishes hemophiliac from normal blood is the fact that the blood in hemophilia shows a definite deficiency in the content of prothrombin.

Now prothrombin is derived from the blood platelets, but only as a consequence of their disintegration. As the number of platelets present in hemophiliac blood is within normal limits, but the prothrombin content is below normal, the logical inference is that the platelets must be resistant to disintegration, which is, in fact, the accepted theory of the mechanism of hemophilia.

The theories of coagulation and of the causes of hemophilia thus briefly outlined represent the results of many laborious and long-continued observations by many patient investigators. This is, indeed, the method whereby the structure of medical knowledge has slowly grown.

Fortunately hemophilia is a comparatively rare disease, for the outlook is necessarily grave and uncertain. So minor are the injuries from which severe and even fatal bleeding may occur and so impossible is it to avoid them entirely that the infant with hemophilia rarely lives to become an adult. If he does not succumb to hemorrhage he must combat the anemia that follows so that, to use a figure of speech, his tiny craft launched on the river of life must pass between the Scylla of hemorrhage and the Charybdis of anemia before it can hope to reach the ocean of adult existence.

The future is not entirely without hope, however, for if adult life is reached there is some tendency for the disease to decrease greatly in severity and, occasionally, to disappear.

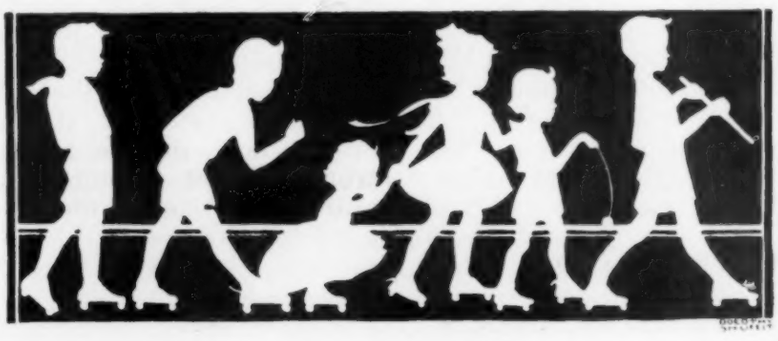
The treatment of hemophilia is, of course, a difficult matter and one in which success is to a large extent problematic.

Emergency Transfusions Necessary

It consists, essentially, in endeavors to enhance the clotting power of the blood, for which purpose a number of procedures have been tried, their very multiplicity indicating that none is entirely satisfactory.

One important and life-saving measure must be emphasized. Every hemophiliac should have his blood grouped or typed and should at all times carry this information with him so that there may be no unnecessary delay in finding a suitable donor should an emergency transfusion become necessary, as at any time it may.

Perhaps, however, some investigator of the future may find the missing factor that may make it possible to number "the bleeding disease" as a memory of the past and another tribute to the victories of preventive medicine.



The crown of a tooth lodged in a man's bronchial tube, and (above) a butterfly pin, a thumb tack and an open safety pin in the esophagus of three children, the last in a baby, 6 weeks old.

What Children Put in Their Mouths

By Mervin C. Myerson

"HOW in the world did the poor baby get that into his mouth?" is the question one frequently hears asked when an infant has accidentally swallowed a foreign body. By this is meant anything that does not regularly belong in the mouth or throat. It is estimated that more than 1,000 foreign bodies are swallowed or inhaled by infants and children in this country during each year. The articles vary from a piece of straw to a part of a toy, a safety pin, tack, screw, coin, seed, nut, bone or food particle. Anything that may do harm in its passage downward may be considered a foreign body. When a child or an adult swallows a foreign body it is called a foreign body accident. Such accidents are usually avoidable. Before considering the causes and the prevention of foreign body accidents let us discuss the structures into which a foreign body may pass.

How Esophagus Becomes Obstructed

The mouth leads into the esophagus, or gullet. This is a thin tube of soft tissue structure that connects the throat with the stomach. The swallowing tube in its upper part is just behind the windpipe so that anything large that sticks in this part of the esophagus may press forward on the windpipe and affect the breathing. Anything that is too large or pointed or too hard may stop at the top of the esophagus, in its center or at its lower end just before it enters the stomach.

Danger of Foreign Body Inhalation

When a foreign body is breathed in or inhaled, it passes through the mouth and into the larynx, which contains the vocal cords. Just below the vocal cords the trachea, or windpipe, begins. This leads into the right and left bronchial tubes.

A foreign body, then, may fall into the esophagus and block the food passages, or it may be inhaled into the air passages and block the larynx, the windpipe or one of the main bronchial tubes. If the object is small it may get into one of the smaller bronchial tubes and cause painful obstruction.

When something lodges in the upper food passage there is a sensation of pressure and usually some trouble with swallowing. When something gets between the vocal cords or down

the windpipe or into a bronchial tube there is trouble with breathing. The irritation of the foreign body in the air passages will cause severe coughing spells every time the object moves. If the foreign body blocks the space between the vocal cords, or the windpipe, then the person is in danger of suffocating if something is not done in a hurry. If it goes down into a bronchial tube and stays there too long, pneumonia and serious lung disease may be the result.

Avoiding Foreign Body Accidents

The most dangerous foreign bodies are the pointed ones, because they are likely to pierce the tissues, and substances such as nuts, candy and vegetable matter that cause severe irritation in the bronchial tubes.

Today because of the use of special electrically lighted tubes and suitable instruments, it is possible to remove a foreign body in almost all cases. In the days before these instruments were first invented (1897), it is estimated that 40 per cent of victims of foreign body accidents died. Today the mortality rate is closer to 1 per cent.

Foreign body accidents are avoidable, because they are principally due to some form of carelessness on the part of persons caring for an infant or child. Sufficient caution is not used in feeding or in the selection and preparation of food, in the selection of toys or in setting an example.

Two instances of carelessness in the supervision of the infant or young child follow: Mother, for example, has an open safety pin between her teeth. Something happens to attract her attention. She suddenly opens her mouth and because she is leaning over the baby the open safety pin falls directly into the baby's mouth and down her throat. Or mother leaves the baby and some open safety pins on the bed while she goes to do something. The baby so pulls on the bedspread that the pins come close to him and he gets one of them into his mouth. Mothers and nurses should cultivate the habit of closing safety pins whenever they find them lying open around the house or near the baby.

Other important preventive measures include the following:

1. Children should not be permitted to play with small objects. If the baby plays on the floor where there happen to be nuts, marbles, buttons or any type of small object, one of these may be picked up and may easily find its way into the baby's mouth.

2. Children should not be allowed to have anything in their mouths while they are running or playing.

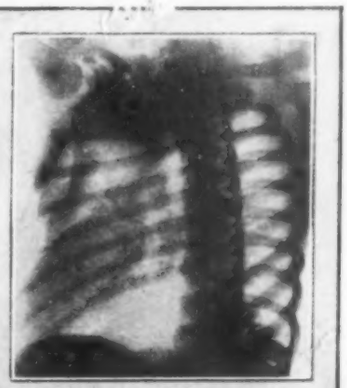
3. Children and adults too should not be permitted to have anything in their mouths while riding in an automobile. A sudden stop or lurch of the car can cause one suddenly to swallow or inhale articles.

4. Carelessness in eating, feeding, in the selection and preparation of food warrants attention. An infant or a child should never have food of any kind forced into the mouth. The force is not only too great but the child is not ready for it, and the food may choke him or cause serious trouble. Never try to make a child eat while he is crying or yelling. Never permit a child under 2 years of age to eat nuts or anything that requires hard chewing, because at this age there are no molar teeth present.

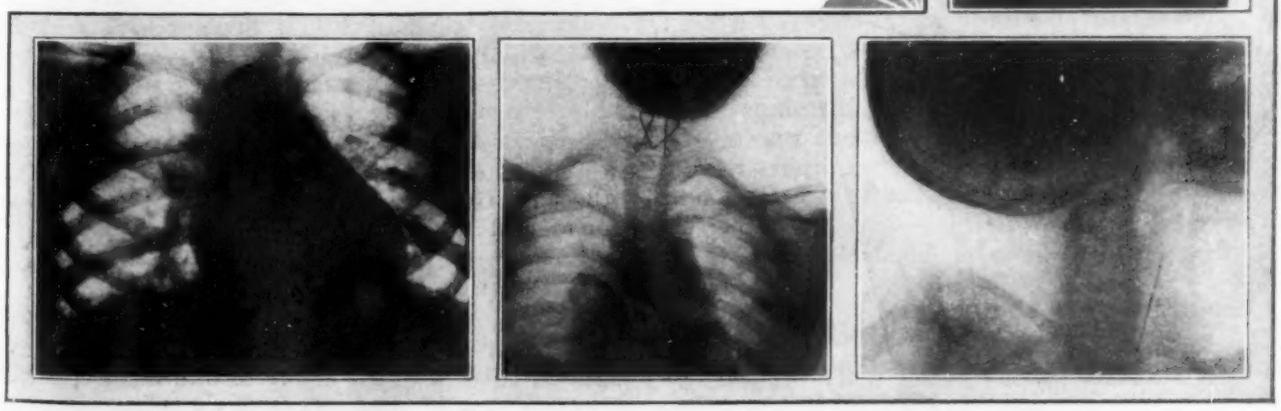
Carelessness in Eating Causes Accidents

Adults get into trouble because of carelessness in eating. Recently a man ate a can of corned beef so quickly that he swallowed a large metal disk along with the beef.

One should be careful in feeding an invalid not to give him too much at a single bite.



A coin and a paper clip in the upper esophagus of two children; a shawl pin in a boy's windpipe and a nail in the bronchial tube of a 7 year old carpenter.



When the housewife is cooking or preparing foods, loose pins may drop from her clothing into the food. One day a woman sampled a newly made cake; she was greatly surprised because she felt a sharp sticking pain in her throat. X-ray examination showed that a small bar pin that she was wearing while baking had fallen into the dough, and she had swallowed it with the first mouthful.

Great care should be exercised when one serves food that comes from a shell, such as eggs, crabs, lobsters and shrimp, for a piece of shell may be served with the food and it may be accidentally swallowed.

A child, 27 months old, was fed a soft boiled egg by her grandmother. The child choked while eating and became hoarse. She remained hoarse for twenty-two days. On the twenty-second day a piece of egg shell was removed from between her vocal cords and she was again well.

5. Toys should be so designed that there are no small parts that can become loose and find their way into children's mouths. Very small toys should not be selected for the same reason. Young children should not be permitted to play with pins, nails, coins, buttons, loose beads, seeds and nuts.

6. Infants and young children will place things in their mouths for two reasons. Instinctively an infant learns to understand the size, shape and hardness or softness, roughness or smoothness of an object by placing it in his mouth. Other children put things in their mouths through pure imitation. We are told that children are not capable of imitation until they are 18 months old. A child sees her mother place a pin or safety pin in her mouth, and learns to believe that such is a proper thing to do. The mother in the street car places a coin between her teeth while she closes her pocketbook. The child sees her do this and is of course likely to imitate. The habit of chewing a piece of wood, a toothpick or match stick sets a dangerous example.

Thus the boy who plays carpenter and gets a nail or a screw down his lung has been imitating what he has seen. Children should be instructed that even though carpenters place nails in their mouths and dressmakers hold pins between their teeth, such practices are dangerous and should not be imitated. They often cause accidents among adults as well.

What can a parent do when a child gets something down his throat that does not belong there? If an object can be seen in the mouth and can be readily grasped with the fingers then it is an easy matter to pick it out of the mouth. But if it is in the throat the finger will not help matters, for the finger can only push the foreign body down farther. A physician should be called who can properly advise the parent what ought be done.

In many cities there are hospitals at which foreign bodies can be readily removed; these hospitals and their doctors are usually known to the family physician.

It should be remembered that the longer an object stays in the food or air passages the greater will be the damage done. In certain cases it is safe to wait but the question of whether or not to wait should be left to the doctor in charge of the case. Precaution, however, eliminates much trouble of this nature.

Accidents Are Greatest Single Cause of Blindness

THERE is every reason to believe that accidental injuries to the eye now constitute the greatest single cause of blindness. Particularly as the result of occupational hazards has there been an increase in the loss of eyesight.

Lewis H. Carris of the National Society for the Prevention of Blindness maintains further:

"But a very large part of the increase in industrial blindness is due to the fact that while a comparatively few large corporations have given serious attention to accident prevention and so have brought about extraordinary reductions in all accidents, including those causing eye injuries, the vast majority of industrial properties are still paying little attention to the actual prevention of accidents."

The problem, the author adds, provides three vital aspects in its solution. Through mechanical devices, through training and education of workers, supervisors and managers in safe practices, and through proper administration and supervision, the sight of men and women in industry can be safeguarded.

One of the most effective devices is goggles. Much progress has been made in the construction of goggles for this use. The lenses are made to withstand much greater stress; the glass when shattered is much more likely to remain in the goggle frame; they have been made more comfortable by lighter weight. A large optical goods company reports that fifteen years ago its sales of goggles and headmasks totalled $50,000 a year; last year the same company sold $1,300,000 worth of goggles and masks.

To this extent, the large corporations have responded well. Many have even appointed safety engineers. But safety has not corresponded with output; hence in one large industrial city in one year 588 eyes were lost.

How Science Solves Crime

II. Identification of Firearms

By CALVIN T. GODDARD

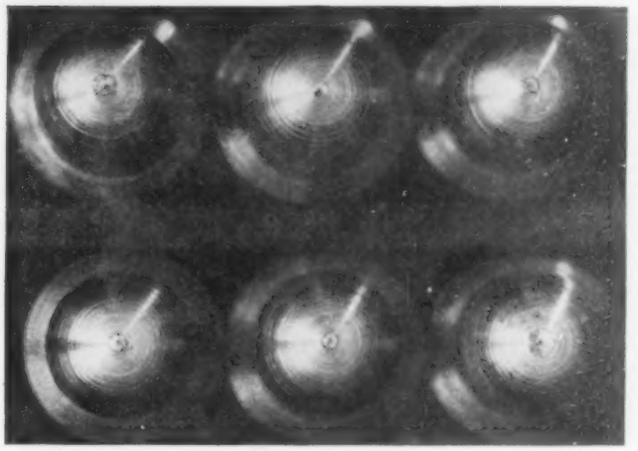


Fig. 1.—The differences are apparent in the conformation of the tips of six firing pins made successively on the same machine. Contact with the cartridge caps will leave identifying imprints.

NEW methods, no matter to what field applied, always meet much resistance in the form of skepticism. Most of us find it difficult to accept novel theories, and some refuse to do so even in the face of overwhelming proof. Only recently I met a man who described how, some thirty years ago, he was appointed to look into a new-fangled system of human identification known as finger-printing, which at the time was incurring the amused and incredulous smiles of the world at large.

So when we find among the populace in general and some police officers in particular a well developed doubt as to the possibility of determining what particular gun fired a certain bullet or shell, there is small occasion for surprise. It does sound like a rather difficult, if not impossible achievement, and it is hard to describe the methods employed to persons lacking a scientific training unless by chance they happen to be familiar with the machining of metal products. Such persons grasp the theory at once and need but little to convince them of its practicability. Nevertheless, the whole matter rests on facts so patent and so easy of demonstration when the opportunity offers that any intelligent adult who has an open mind can, if he wishes, comprehend the technic of firearm identification with but little expenditure of effort. I shall, therefore, undertake to outline the method of procedure in the simplest terms available.

Fig. 2.—Imprints of the same firing pin in the caps of two shells. Although located at somewhat different points, the great similarity of the two indentations is apparent.

Fig. 3.—Imprints of firing pins on the caps of shells fired in different weapons of the same make, caliber and model, showing marked lack of similarity between the indentations present.

The possibility of identifying the weapon that fired a certain projectile proceeds from an axiomatic truth the correctness of which cannot be successfully attacked. This is, that *no two things are alike*, and when I say this, I include all material objects with which we come in contact in this vale of tears. It holds for two red blood cells lying side by side in the field of a microscope, for two pins made in succession on the same automatic machinery, for two imprints struck on a sheet of paper by the same key of a given typewriter, for two seeds in the same pod—in short, for any two objects that we choose to compare with each other. Of course, they bear strong resemblances, but when we come to scrutinize them carefully, our blood cells will be found to vary in diameter by a number of microns; our pins will differ in weight by some thousandths of a milligram, and probably in length as well; our typed symbols will vary in the amount of ink that they have carried from the ribbon to the paper, our seeds will vary in length, shape, weight and color, and so on ad infinitum.

If we will but bear this basic fact in mind, it becomes evident that two weapons produced in the same factory by the same machinery must necessarily differ in some particulars. How marked these differences really are, I hope to develop subsequently. And if they differ, it is but reasonable that their differences should register on the bullets and shells fired in them. If the differences are sufficiently pronounced, they will impart certain identifying characteristics to these bullets and shells that will be marked enough to link them to the particular weapons from which they came.

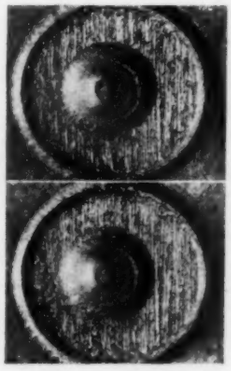


Fig. 4.—Marking on the caps of two shells fired in the same gun resulting from their recoil against the steel breech of the weapon. These are identical in character.

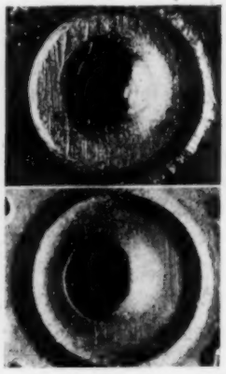


Fig. 5.—Markings on the caps of two shells fired in different guns of the same make, caliber and model, showing the great difference existing between them.

When a small arm is fired, the bullet travels through the barrel, which directs it toward its target. Manifestly, if one barrel differs from another, these differences will be recorded on bullets passing through them and, if sufficiently striking, will serve as a means of identification. Again, in the process of firing a cartridge, the nose of the hammer, or firing pin, of the weapon impinges on the cap or primer in the head of the shell; this contains a small quantity of a substance that explodes as a result of the blow thus received, transmitting to the powder charge ahead a tiny flame which sets it into combustion. As the powder burns, it is converted from a solid into a gas occupying many times its original volume. The pressure of the expanding gases is great, averaging from 8,000 to 10,000 pounds to the square inch in many of our commonly used pistols, and the force thus developed drives the projectile ahead of it down the barrel. At the same time it forces the shell rearward against the breech of the weapon.

Now it is not possible to fashion two firing pins identically alike even when these are made in succession on the same machine (fig. 1). As a result, the imprint left in the exploded cartridge cap is going to reflect the characteristics of the particular firing pin that struck it, and these will differ from those imparted by any other firing pin in the world. Here we have one point of identification that may prove most valuable. The effect is just as though each individual firing pin stamped its initials into every cap with which it came in contact, so that by careful study under a comparison microscope (to be described and illustrated later) we are commonly able to identify the markings left by a certain firing pin on one or more shells.

Manifestly, unless the original firing pin of a weapon has been removed or altered since it figured in some criminal affair, we can, if a fired shell from the scene of the crime is available, fire a second shell of the same make and type in the weapon under suspicion and compare the cap indentations for points of similarity. Figure 2 will illustrate such indentations as were left in two shells by the same firing pin, while figure 3 portrays the cap markings on two shells fired in guns of the same make, caliber and type but not in the same weapon. The similarity in markings present in figure 2 and the differences in figure 3 are obvious.

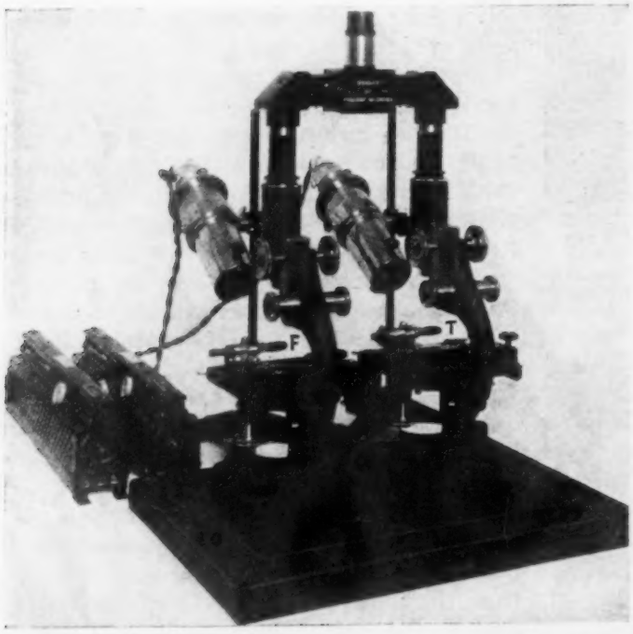


Fig. 6.—Comparison microscope, with the fatal bullet (F) mounted under the left tube and the test bullet (T) under the right.

No Two Gun Breeches Are Alike

When the head of the shell is driven backward against the breech of the weapon by the pressure of the expanding gases, it acquires an entirely new set of markings. These arise from the fact that the surfaces of no two gun breeches are identically alike. They exhibit certain minute scratches, elevations and depressions, as a result of the machining and hand finishing processes to which they have been subjected, that invariably show material differences when inspected under a hand glass or under moderate magnification beneath a microscope.

When the soft copper cap or primer and the harder brass shell head that surrounds it are thrown violently against the steel breech face

by the force of the expanding gases as already described, they take from the latter, markings that inversely reproduce those present on its surface. These consist ordinarily of a series of more or less parallel lines representing the marks left by the hand filing of the breech surface subsequent to the last machine operation on it. It is not possible to make the same stroke twice with a file. That is self-evident. As a result, no two breech faces will exhibit the same filing marks or will transfer to shells recoiling against them marks arranged in similar patterns. This is again well demonstrated in figures 4 and 5.

So we have now two methods of identifying a shell to the weapon in which it was fired, the first by means of the firing pin imprint, and the second by means of the markings that it acquires when recoiling against the breech of the weapon. Other characteristic marks are left on shells (in automatic and repeating arms but not in revolvers) by the extractor and ejector, which successively remove the discharged shell from the chamber and throw it out of the gun. Since no two extractors or ejectors can be made identical in all features, it is evident that these again will leave their individual signatures on those shells with which they come in contact, and on these alone it is not infrequently possible to establish an identification.

While the empty shell is an important factor in firearm studies and frequently offers much more useful information than the fired bullet, nevertheless it is not as commonly available as is the bullet, because in most instances wherein revolvers are employed the fired shells are transported from the scene of the crime in the weapon involved. Hence, it is only in those cases in which automatic or repeating arms are used that we may ordinarily expect to find shells in evidence. Such instances are becoming more and more frequent, however, and as a result the shell is assuming increasing importance in identification.

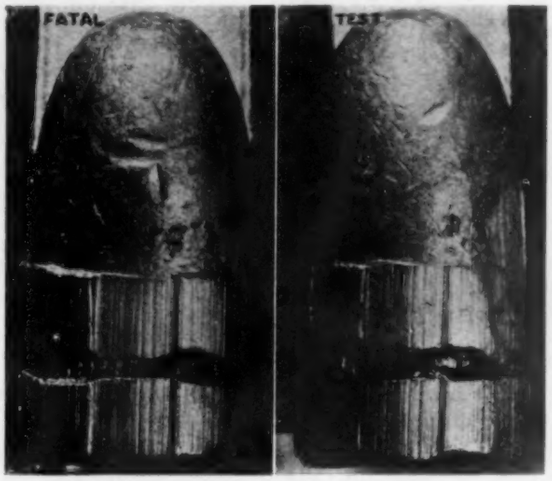


Fig. 7.—A fatal and a test bullet fired from the same weapon. The similarity of the fine markings on their lower cylindric positions may be seen. These were acquired during passage through the barrel, in contrast with those on their rounded positions, which were received after leaving the weapon.

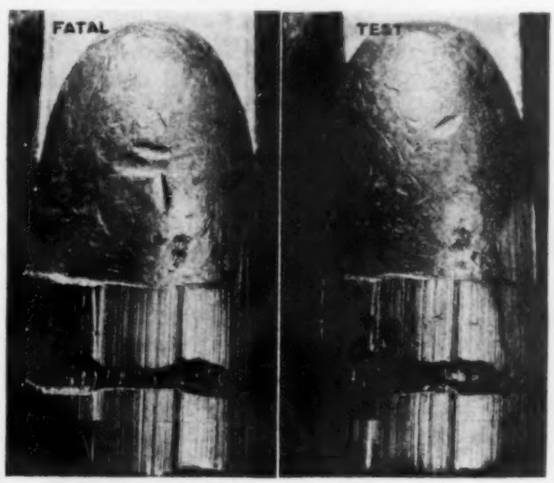


Fig. 8.—Two prints of the fatal bullet shown in figure 7 and one of the test bullets illustrated. The latter has been cut in two portions and one portion superimposed on each of the two prints of the fatal bullet and the result photographed. The similarity in fine markings on the bases of the two bullets is apparent.

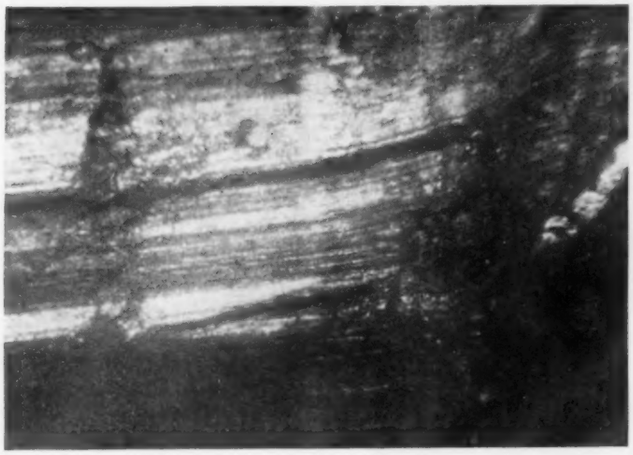
Let us revert to our bullet, which when last seen was traveling down the barrel ahead of an expanding cloud of powder gases; what markings may we expect to find on it after it has come to a stop in the body of its victim? These will vary materially according to the attendant circumstances, but in general we shall come upon, plainly engraved on its surface, a series of what are known as rifling marks. What are these and whence do they arise?

In modern practice, all pistols and revolvers are "rifled." This means that from end to end of their barrels there are engraved in the surface of the bore a series of grooves or gutters that are standardized for the make, caliber and type of weapon involved. In other words, these grooves will be of a certain number, inclined in a certain direction, sloping at a given angle, and of a standard width and depth for any two specimens of a particular make, model and caliber of arm, but will exhibit characteristic differences in two weapons of different manufacture. The fact that they are cut on an angle instead of parallel to the axis of the bore causes them to adopt a spiral form and impart a rotational effect to projectiles passing through the barrel. As a result, the bullet spins like a top around its long axis and flies much farther and straighter than were it not so spun.

Different arms makers have differing views as to the best type of rifling to employ. For instance, Smith and Wesson, well known American makers, cut in their barrels five grooves inclining to the right, while Colt, equally well known, employs six grooves inclined to the left.

In the making of bullets for an arm of a given caliber and type, the projectile is cast to a diameter that will fit to the bottom of the grooves in the weapon designed to fire it. Hence, those portions of it that come in contact with the elevated surfaces of the bore, which project between the grooves and which are known as

Fig. 9.—Portions of two bullets fired through the same weapon after similar areas have been brought into approximation and photographed through the eyepiece of the comparison microscope. What appears on the left of the vertical broken line is part of the fatal bullet; what is seen on the right comes from the test bullet. The small parallel lines, which constitute the identifying markings, flow across the point of separation in a striking manner.



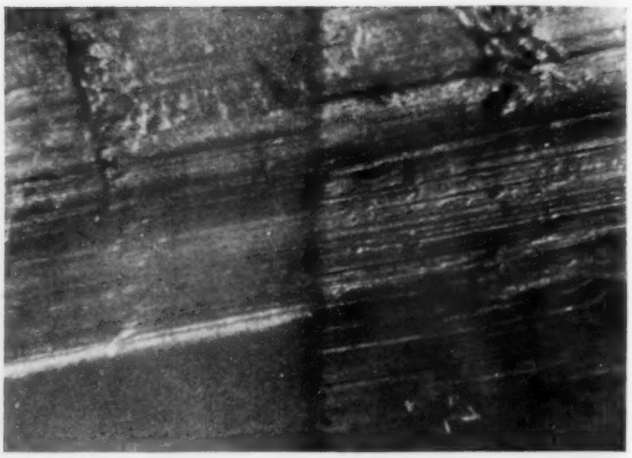


Fig. 10.—Two bullets from the same weapon photographed as in figure 9 but with noncorresponding areas approximated. Save in an occasional accidental instance, there is no fusion of the small parallel lines that serve as points of identification.

"lands," are cut away or channeled out, while those portions that fit into the grooves are not so scarified. As a result, the fired bullet shows on its surface a series of grooves that correspond to the indentations made on it by the lands of the barrel, between which are a series of elevations, or lands, which constitute the portions of it that have been in contact with the grooves. In other words, the land and groove markings on the bullet are the reciprocal of those present within the bore of the arm.

Since it so happens that no two makers of firearms employ the same identical rifling specifications, as already outlined with regard to Colt and Smith and Wesson, it is apparent that a bullet fired from a weapon of a certain make will exhibit rifling marks characteristic of that make. If we have at our disposal data covering the rifling specifications for all makes of arms in current use, it is ordinarily possible by means of counting and measuring the groove marks on an unknown bullet and determining the angle these make with its long axis to ascertain that these markings are characteristic of those imprinted by a given make of weapon and different from those produced by any other make.

Tests Are Made in Cotton Waste

Having advanced so far, we then look for a suspect possessing a weapon of this type. If one such is found, the next move is to fire through the arm under suspicion one or more test bullets. These are caught in cotton waste which yields them up undeformed. We now place our fatal bullet beneath one tube of a comparison microscope (fig. 4) and the test bullet beneath the other tube. Through an arrangement of prisms, a composite image of the two bullets is built up in a single eyepiece, which surmounts the cross-arm joining the two microscopes (fig. 6). One half of this image is supplied by the fatal bullet and the other half by the test. We rotate one bullet unfil a groove mark on its surface occupies the center of the field. We then rotate the other until a similar mark on its surface is approximated with the first. Since both bullets have been fired from weapons of the same make, caliber and type, we find that the edges of our groove marks fuse evenly across the dividing centerline of the eyepiece. Were they from weapons of different makes, we would find the grooves to be of different widths, inclining in different directions, or, if in the same direction, at different angles (fig. 11).

Comparisons and Contrasts Are Made

But the establishment of the fact that our fatal and test bullets both bear rifling marks characteristic of a given make and type of weapon leaves much to be accomplished. The question now becomes: Are they from the same weapon? To determine this vital point, we must look for markings of a more delicate nature than the broad grooves imprinted on the bullet's surface by the lands of the barrel. They are there, and plentifully so. Their presence is due to the fact that the rifling tool that scrapes out the grooves in the bore of the weapon is subject to constant wear on its cutting edge. As a result this edge, like that of a razor blade, is made up of a series of minute teeth. These are continually undergoing change and rearrangement as the machining process is carried out, with the result that each groove in the bore shows, when the rifling operation is completed, a series of parallel lines between its two edges that reflect the condition of the minute teeth on the rifling cutter at the moment of its final passage through the particular groove. Since the cutting edge changes so rapidly, the series of parallel lines in any one groove differs materially from that in the next groove or the next.

Here we have the basis of bullet identification. For when our projectile passes through a barrel, those portions of it that touch the bottoms of the grooves receive the imprints of the irregularities there present. Two bullets fired through the same barrel will show, provided we compare corresponding groove marks on their surfaces, the same series of minute scratches present within these groove marks, and no bullet through any other barrel, whether or not through the same make of weapon, will exhibit this identical series of scratches. In comparing the two bullets under the microscope, we keep one immobile, as already indicated, and rotate the other slowly, attempting to find a series of tiny scratches on its surface that correspond exactly with those present at that point of the nonrotating bullet, which is then in focus. If we can discover such a duplication of markings, we may then revolve the two bullets simultaneously and the duplication will be found to exist throughout their entire circumferences.

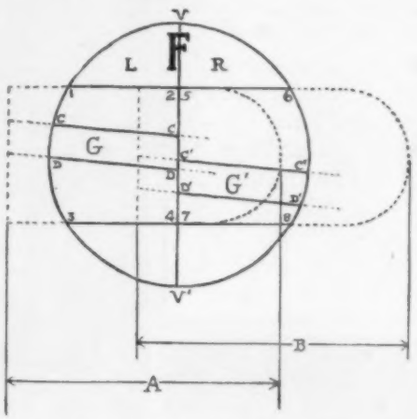


Fig. 11.—A diagram illustrating the fusion of images of fatal and test bullets in the eyepiece of the comparison microscope. The area outlined by 1, 2, 3 and 4 represents a portion of the surface of the fatal bullet on which, in its passage through the barrel, has been engraved the groove G. Area 5, 6, 7 and 8 illustrates a portion of the surface of the test bullet, with its corresponding groove G'. By rotating the test bullet on the spindle on which it is mounted, grooves G and G' can be brought into approximation for purpose of comparison.

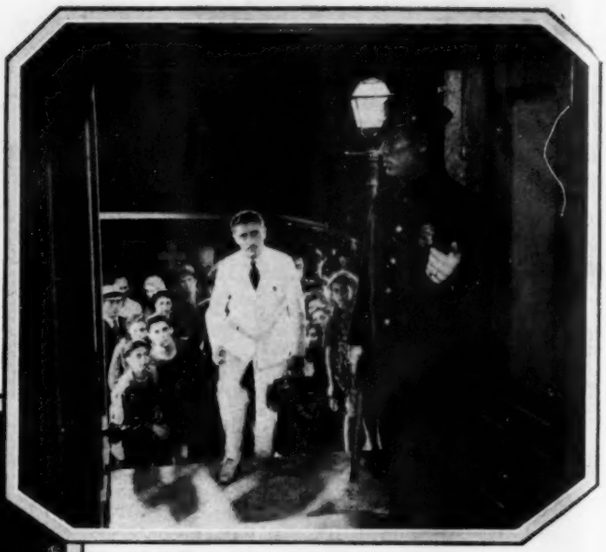
Not only do characteristic fine markings, which serve to identify a given barrel, appear in the grooves of that barrel as a result of the cutting operation by which these are formed, but similar identifying scratches are present on the lands as a result of the lead-lapping and throating operations to which the barrel is subjected after its grooves have been cut. As a result, the entire surface of a bullet will exhibit minute identifying lines that reflect on it the sum total of the irregularities present in the barrel through which it has passed.

Figure 7 illustrates two bullets fired through the same weapon, showing the large number of fine parallel lines present on their surfaces as a result of the forces just described, and figure 8 portrays a method whereby these can be compared and shown to be identical. In figure 9 we see two bullets from the same weapon photographed through the eyepiece of the comparison microscope, while in figure 10 we see the same two bullets photographed with noncorresponding grooves in apposition. Apart from the matching of the broad groove edges, which merely indicates that they are from weapons of the same make, no indication of identical markings is present. This shows us how materially the surface of any given bullet differs in its appearance as we proceed from groove to groove, and indicates how necessary it is that we compare corresponding grooves of two bullets under inspection if we are ever to satisfy ourselves as to their identity.

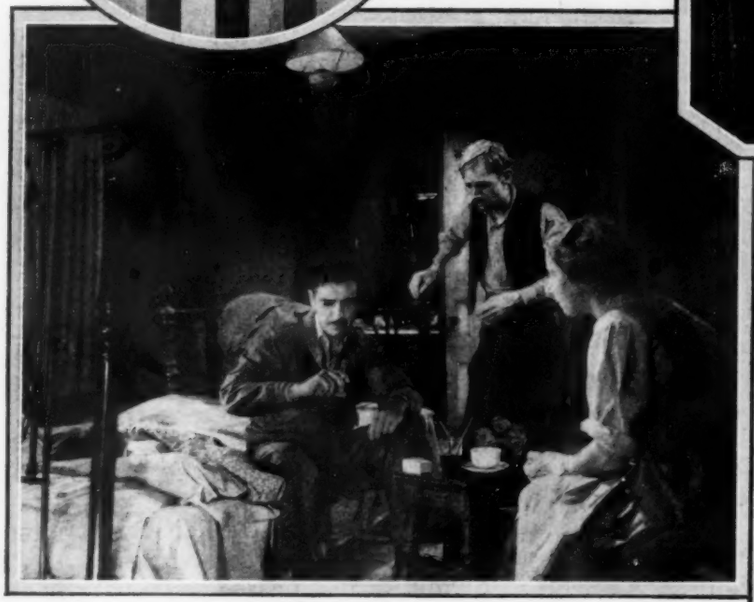
Since a bullet varies materially in its markings from groove to groove, it is evident that the barrel through which it passed must vary to the same extent. And if two adjacent grooves or lands in the same barrel are as vitally different as the markings that they impart to a fired bullet indicate—in other words, if it is not possible to fashion two similar areas of the same barrel exactly alike—it becomes evident that it is still less possible to construct two successive barrels that will resemble each other in every particular, and that the chances of producing two such are absolutely nil.

The next article in the series is on the employment of "truth serum" in the interrogation of criminal suspects. Lt. Col. Calvin Goddard, director of the Scientific Crime Detection Laboratory, is again the author. It will appear in the April number.

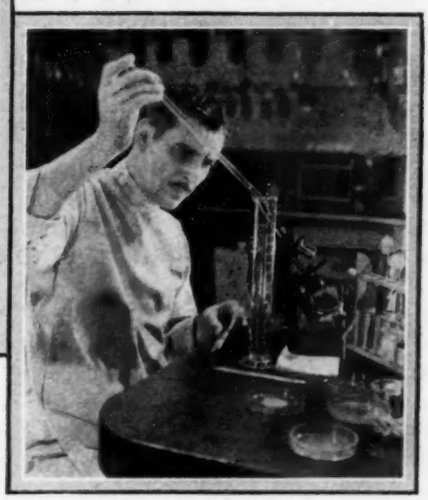
RONALD
COLMAN
as
Martin
Arrowsmith.



Dr. Arrowsmith makes
an emergency call.

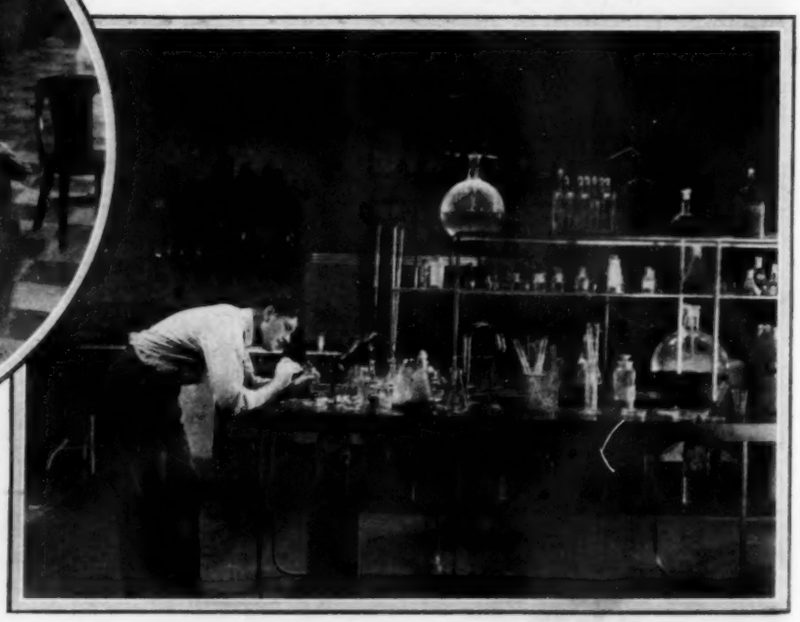


An all-night vigil to save
a child with diphtheria.



Dr. Arrowsmith takes up
medical research.

Dr. Arrowsmith meets
Leora, whom he marries.



The research scientist on the brink of discovery.

SIX SCENES FROM
THE FILM VERSION
OF ARROWSMITH

See World Book Review Digest – 1925

ARROWSMITH

Medical Novel by Sinclair Lewis Satisfactorily Filmed

THE father of Sinclair Lewis was a physician, a country doctor in Minnesota. The brother of Sinclair Lewis is still a physician in Minnesota. The winner of the Nobel prize in literature for last year, therefore, comes naturally by an interest in medicine and by a real appreciation of the work of the country doctor.

The novel "Arrowsmith" was written by Sinclair Lewis in collaboration with Dr. Paul de Kruif, noted as the author of "Microbe Hunters." In Will Kennicott of "Main Street," Sinclair Lewis had already presented one picture of a country physician. In "Arrowsmith" he presents not so much the country practitioner satisfied with his labors as the physician possessed of the true spirit of scientific research.

In 1923, Paul de Kruif was writing some articles on medical topics for Hearst's Magazine. He came to Chicago to the headquarters of the American Medical Association to get material and to check some of the facts that he wished to use in his articles. About the same time Sinclair Lewis came to Chicago to do some work in preparation for a novel that he planned to write on labor. De Kruif and Lewis met in the office of the editor of HYGEIA, Dr. Morris Fishbein. Dr. Paul de Kruif had done notable research on immunology in the University of Michigan and had been for some time a member of the staff of the Rockefeller Institute for Medical Research in New York City. There he was associated with Jacques Loeb, Alexis Carrel, Northrup and others working under the direction of Dr. Simon Flexner.

The Idea Is Born

One night Lewis, de Kruif and Dr. Fishbein went out to Elmhurst to see Eugene Debs at a sanatorium, for a novel of labor without Debs would hardly be adequate. On the long ride back from Elmhurst, after much discussion, Lewis decided to write a medical novel instead of the novel dealing with labor. It was then also that he decided to go with de Kruif on a trip abroad and to stop en route at Barbadoes. In the motion picture "Arrowsmith," the scenes played in Barbadoes are striking.

Sinclair Lewis, like every other author, builds his novels from his own experience and observations. Thus on Feb. 13, 1924, he wrote to Dr. Fishbein:

S. S. CRYNSSEN
Between Puerto, Colombia, and
Curacao. . . . we'll be in England
on March 6—write me %
Guaranty Trust Company,
50 Pall Mall, London.

Dear Morris:

I've been decidedly slim on corresponding, and I probably shall continue to be so—between working like hell on the new novel with Paul (who daily proves to be more of a wonder, to work with as well as to play with) and seeing many places, a million new places. . . . The trip is bully; full of highly varied country and towns. . . . First, eleven days in Barbadoes, which is more English than it is tropical, even though the people are most of them black. . . . We went with the chief medical inspector of the island on a number of trips, and saw alms houses and hospitals and a leper asylum as well as cane fields and palms and plaster huts. . . . Then Trinidad—real tropics, thick green with the huts of Hindus as well as dinges and Chinks and Spanish. Staying on this same steamer (on which we'll stay till England) we have seen towns in Venezuela and Colombia—we went shooting from La Guaira up to Caracas, a hell of a steep and thrilling drive by motor, among other things.

While the steamer went from Colon up to Costa Rica and back, we stayed in Panama and saw the bacteriological lab and a lot of sanitary work of Dr. Goldthwaite in Panama.

It's been a great trip, and the book goes splendidly. It won't be done for a year or more, but when it is I think things will pop.

Ever,
Sinclair Lewis.

In the story of "Arrowsmith," a young man of pioneer stock becomes first a country doctor, then a research worker in medicine in a great scientific institute, then an investigator of plague during an epidemic in Barbadoes. His wife, previously a nurse, dies of plague during the epidemic.

Motion Picture Well Cast

The presentation in the motion picture picks only the high points of the novel, but in doing so sings the epic of the research worker in medicine. It brings into the picture great characters —Gottlieb, high priest of truth and reason and science, and Sondelius who carries the discoveries of medicine into the conquering of disease. In the preparation of the motion picture the casting has been exceedingly fortunate. Richard Bennett as Sondelius and A. E. Anson as Gottlieb are true to the life. Helen Hayes plays her part as sympathetically and enlists the sympathy of the audience as certainly as she did in "The Sin of Madelon Claudet." Ronald Colman is a quizzical, burning Arrowsmith.

Many a novelist has resented the motion picture treatment of his brain child. Sinclair Lewis has been fortunate in the presentation of the best of Arrowsmith.

HEADACHE RELIEF

By Solon R. Barber

PERSONS who have suffered from a genuine old-fashioned raging headache will agree that the headachee wants to do something about it. There is something about such pain that demands action and relief—and at once.

Among my friends are many who go slightly haywire from headaches from time to time. They have their pet treatments—some good, some worthless. These treatments run from pills to hot or cold packs, to rubs, to trying to count imaginary sheep jumping over an imaginary gate.

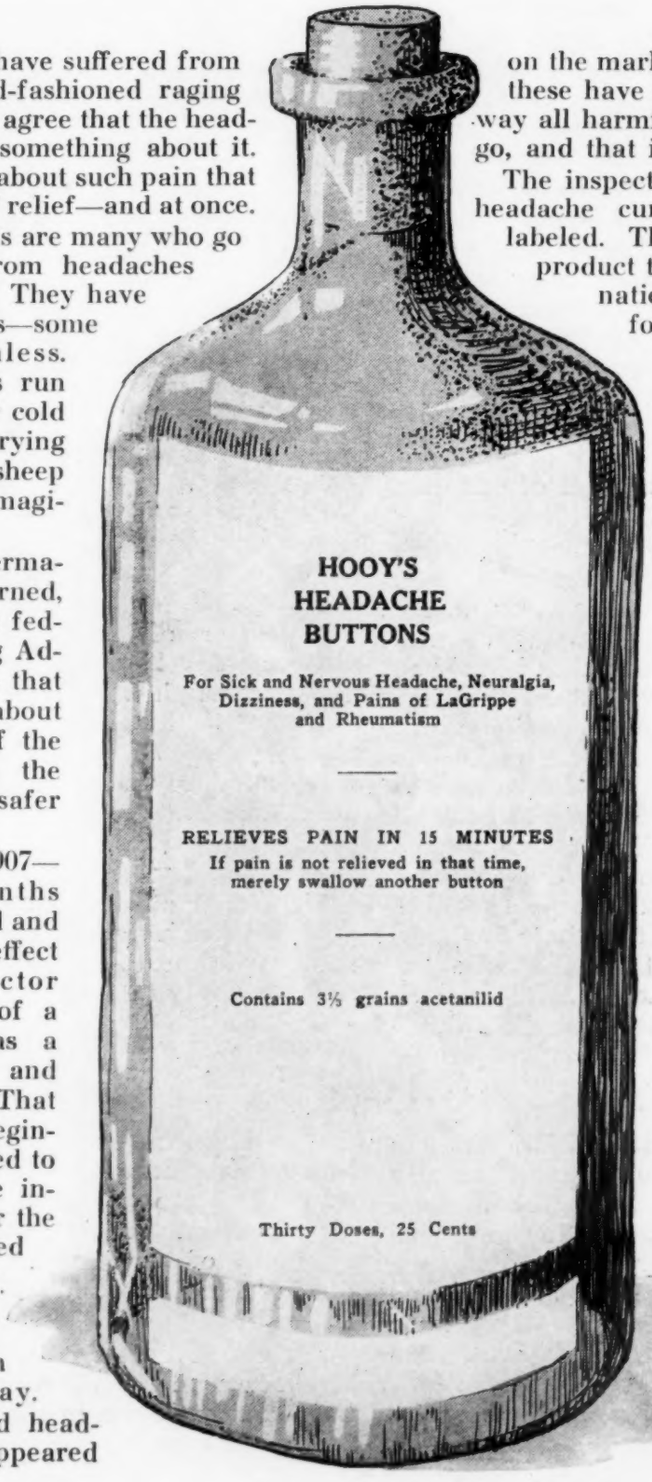
But so far as permanent relief is concerned, drug officials in the federal Food and Drug Administration tell me that counting sheep is about as good as some of the alleged "cures" on the market and much safer than others.

On Aug. 27, 1907—almost eight months after the federal food and drugs act went into effect—a federal inspector bought a package of a medicine labeled as a cure for headaches and as a "brain food." That purchase was the beginning of action that led to the first legal battle involving a drug under the new law, that attracted the personal attention of President Roosevelt, and that has come right down to the present day.

Scores of so-called headache remedies have appeared on the market since that date. Some of these have stayed; some have gone the way all harmful, mislabeled drugs should go, and that is into deserved oblivion.

The inspector bought a sample of this headache cure and "brain food," so labeled. The government subjected the product to a careful chemical examination in the laboratory and found that it contained a large quantity of a coal-tar chemical. This particular chemical—acetanilid—tends to depress the sensibility to pain, but unfortunately it also depresses the heart and is a poison if taken in sufficient quantity. Labeling that preparation as a "brain food" disarmed suspicion with regard to the dangerous character of the article. It led people to believe that it really was a brain food. It was represented as harmless, whereas it contained a dangerous drug. Furthermore, it was labeled with words that were misleading and deceptive to the buyer. The government then took legal action under the food and drugs act because the preparation was being sold contrary to the provisions of that law.

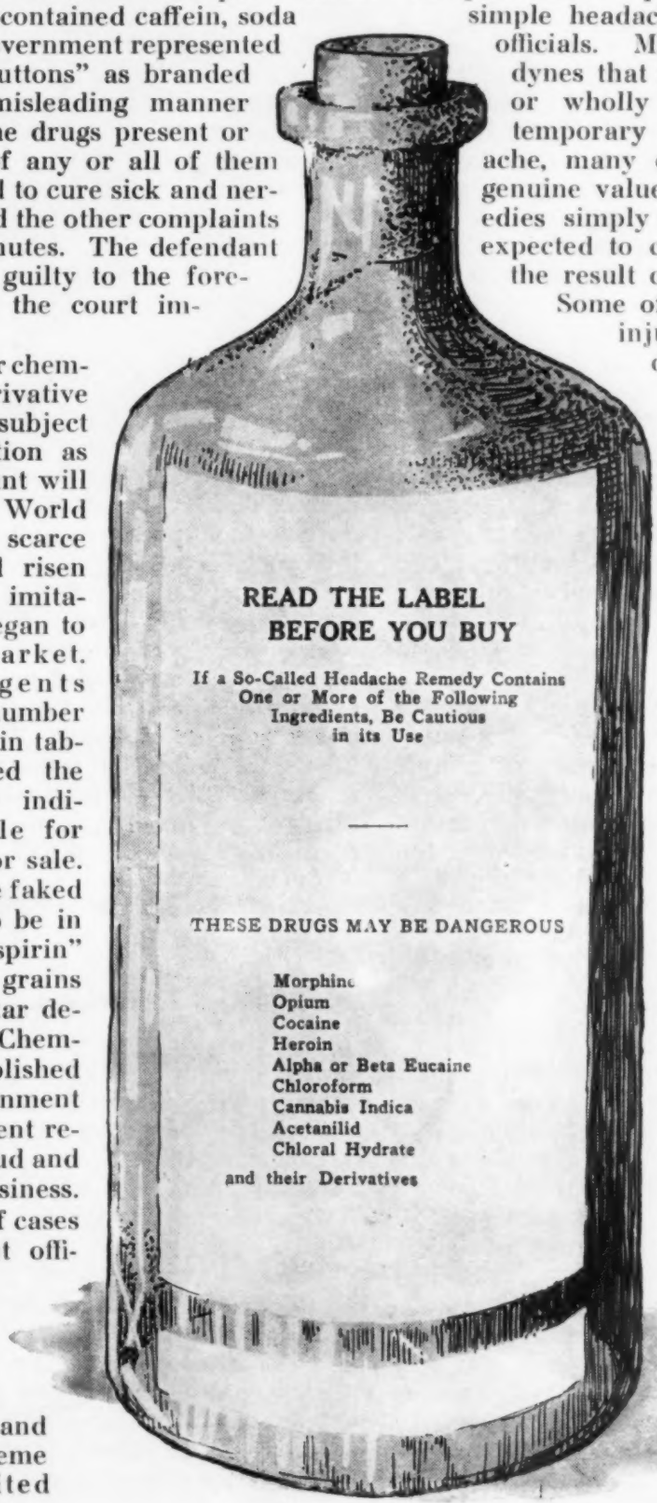
In April, 1910, a medicine company in a midwest state shipped into a southern state a quantity of a drug product labeled "——'s Headache Buttons. Contain


HOOY'S
HEADACHE
BUTTONS
For Sick and Nervous Headache, Neuralgia, Dizziness, and Pains of LaGrippe and Rheumatism
RELIEVES PAIN IN 15 MINUTES
If pain is not relieved in that time, merely swallow another button
Contains 3½ grains acetanilid
Thirty Doses, 25 Cents

3⅓ grains acetanilid for sick and nervous headache, neuralgia, dizziness, severe pains," etc. The company promised to relieve pain in thirty minutes, but if the pain was not relieved in that time the patient was to swallow another button. "Thirty doses, 25 cents." A circular packed with the box said that the drug "cures in fifteen minutes sick and nervous headache, neuralgia, dizziness, pains of la grippe and rheumatism." Federal drug officials analyzed two samples from this shipment and found that the product contained 56.82 per cent of acetanilid. It also contained caffein, soda and starch. The government represented these "headache buttons" as branded in a false and misleading manner because none of the drugs present or any combination of any or all of them could be considered to cure sick and nervous headaches and the other complaints listed in fifteen minutes. The defendant entered a plea of guilty to the foregoing charge and the court imposed a fine.

Aspirin (a coal-tar chemical), the acetyl derivative of salicylic acid, is subject to illegal adulteration as the following account will show. During the World War, aspirin was scarce and the price had risen steadily. Spurious imitations of the drug began to appear on the market. Government agents tracked down a number of adulterated aspirin tablets and established the guilt of firms or individuals responsible for their manufacture or sale. But one dealer in the faked drug still seemed to be in business and his "aspirin" contained about 4 grains of a different coal-tar derivative per tablet. Chemical analysis established this fact. The government apprehended the agent responsible for the fraud and put him out of business.

There are scores of cases wherein government officials have examined samples of so-called headache cures, headache remedies, tablets, salves, ointments and inhalers. The Supreme Court of the United States held, in a case brought against a so-called remedy for cancer, that the food and drugs act as originally enacted did not apply at all to therapeutic claims on the labelings of drugs but dealt merely with their composition. President Taft, recognizing the fault in the original law, asked Congress as an emergency measure to amend the act and Congress did so amend the act as to render illegal preparations bearing false and fraudulent claims.



Many of the so-called cures on the market in the past and at present will tend to relieve simple headaches temporarily, say drugs officials. Many of them contain anodynes that render the patient partially or wholly insensitive to pain. For temporary relief from simple headache, many of these preparations have genuine value. But most headache remedies simply mask pain and cannot be expected to cure it. Headaches may be the result of dozens of body ailments. Some of the chief causes are head injuries, eyestrain, digestive disturbances, nervous disorders. Headaches may be the initial symptoms of many acute diseases. But almost always headaches are merely a result of bodily disorder. Any remedies that make one insensible to the pain only relieve pain temporarily and do not go to the real cause of the trouble. For this reason, there is real danger to the patient in hiding or masking important symptoms of oncoming disease and in delaying the necessary treatment for that disease.

A common type of headache remedy is the so-called anodyne preparation. An anodyne is an agent that tends to relieve pain by blunting or diminishing sensibility, as an opiate; hence, anything that calms or comforts the feelings. Macaulay, the great English historian, once said that a certain Jesuit "had at his command an immense dispensary of anodynes for wounded consciences." Many persons

have suffered more pain from headaches than from wounded consciences. Among the most commonly used anodynes are aspirin and acetanilid. These preparations act on the nerve centers to deaden and depress the perception of pain.

Laxatives sometimes have been represented as headache remedies. Headaches may be due to digestive disorders, and laxatives may relieve a headache that results from them. So many laxatives are used in such remedies that it is difficult to say which are the most common. Phenolphthalein, epsom salt, cascara sagrada, magnesium citrate solution and milk of magnesia are commonly used. They will relieve a headache only when it is due to temporary constipation or disturbances that can be corrected by a laxative. The buyer, then, takes the responsibility and should remember that she is getting a laxative, not a headache cure.

Another class of drugs sometimes labeled as headache remedies contains antacids, the commonest of which are sodium bicarbonate (cooking soda) and milk of magnesia. These are effective only when the headache results from excess acidity of the stomach secretions. They act by neutralizing the excess acidity and also have a slight laxative action. Many headache remedies are combinations of these three types.

Still another kind of headache preparation is generally recommended for external use. These preparations include rubs, poultices and plasters. They act as counter-irritants and encourage the circulation of blood in sections of the body where applied and thus may tend to relieve some headaches.

Inhalants, some of which are popularly known as "smelling salts," are still on sale. They may have some value in the treatment of simple headaches by relieving pain temporarily.

From all of this, one will assume that headaches are not necessarily a specific ailment but are the direct result of some major or minor body malady. If headache is due to eyestrain, it is best to see an oculist and have the glasses refitted or have glasses made. Sometimes headaches are caused by working in dimly lighted rooms or poorly ventilated rooms. A common cause of headache is sleeping in rooms that are not properly ventilated. Fresh air is often an excellent relief for simple headaches not caused by definite body ailments. A headache may be caused by intestinal troubles or nervous disorders or any one of a dozen or more maladies that should be treated at the source and not temporarily relieved with a so-called headache "cure."

When considering buying a headache remedy, read the label on the bottle or package. If the product is labeled merely for simple headache, it probably contains an anodyne. In general, the federal Food and Drug Administration cautions the public against headache preparations as such. Many have a depressing action on the heart and many people are susceptible to the classes of drugs used in these preparations. Anything can legally be used in a drug preparation without label declaration except alcohol, morphine, opium, cocaine, heroin, alpha or beta eucaine, chloroform, cannabis indica, acetanilid, chloral hydrate, or their derivatives. If the manufacturer uses these substances, he must declare their presence and the amount used on the label.

One must not infer that all headache remedies contain any of these drugs. But many such remedies do contain one or more of them. All these drugs may be dangerous if not used with caution and with due regard to the injury each one is capable of doing. The purchaser, before buying a headache remedy, should read the label carefully to find whether or not these drugs are present, and then be governed accordingly.

Lincoln's stories gave Van Buren the most "agreeable night in his life."

LINCOLN and the DOCTORS

By MILTON H. SHUTES

CHAPTER III

IN MARCH, 1837, fortified by a certain political prestige acquired at Vandalia as a member of the famous Long Nine, assemblymen, Lincoln ambled into the newly made Capitol of Illinois on a borrowed horse, lighter in purse than when he climbed the bluff into New Salem six years before. Springfield was his city of opportunity; he had just received his license to practice law and for the next few years we find him, in the words of Joseph Newton, "making his way slowly, unhappy, ambitious, alone. Inured to hardship and poverty, rarely ill, being a man of regular habits; wiry and stalwart, beyond the best of western men."

After two lonesome years, the 20 year old Mary Todd came to Springfield from Lexington, Ky. Witty, caustic, impulsive and lovable, she soon cast a spell over the younger men of the town. A friend of Lincoln, Dr. E. H. Merryman, wrote a poem about this vivacious lady that finally found its way into the *Journal of the Illinois State Historical Society*. It was inevitable that the now well known, woman-shy assemblyman should be attracted to her, and by his uncommonness draw the fire of her interest. There soon followed a stormy romance and engagement which came to a sudden end on the very day of the scheduled wedding, the "fatal first of January, 1841."

Lincoln was 6 feet and 4 inches tall, homely and gawky, and no one knew it more thoroughly than himself. He also knew that he was deficient in schooling, social grace and poise. He was not unmindful of the fact that he came from a generation of poor folk and that a link in his near ancestry was missing. Mary Todd came from an old and well-to-do family of Kentucky and she was a part of the socially and politically prominent Edwards family of Illinois.

It was inevitable that the shy, conscientious, introspective Lincoln should develop acute fears and forebodings, and that the depression engendered by those complexes, meeting with the compulsion of his desire and his ambition should result in an emotional conflict of a disturbing nature.

The word "fatal" as applied to that New Year wedding date was Lincoln's own. He immediately sank into a deep mire of despondency in which the blue devils harassed his soul. Herndon and others believed him within the mists of insanity, and knives and razors were kept away from him. It is asserted that he himself feared the danger of self-destruction and for that reason carried no pocket knife for months thereafter. However, according to his old friend Orville H. Browning, this illness lasted at its worst only a week, during which time "he was incoherent and distraught. . . . I think," said Mr. Browning, "it was only an intensification of his constitutional melancholy; his trials and embarrassments pursued him down to a lower point than usual."

It was about this time—early in January of 1841—that Lincoln wrote to Dr. Daniel F. Drake, dean of the medical department of the College of Cincinnati, a man who deservedly enjoyed a splendid reputation throughout the great West. In a long letter, Lincoln described his symptoms and asked Dr. Drake to suggest a line of treatment, but the doctor replied that it would be impossible to prescribe without a personal interview, which would naturally include a physical examination. Beveridge in his "Abraham Lincoln" adds this footnote: "Daniel Drake was the author of 'Pioneer Life in Kentucky,' so frequently cited in chapter II of this volume. He was about 55 years old when Lincoln wrote him, the acknowledged head of his profession and greatly admired and respected. Few men have had a more brilliant career. Lincoln could not possibly have done better than to have gone to Cincinnati and personally consulted this wise, experienced, and highly educated physician, and it was a serious mistake that he did not do so."

Beveridge seemed to be concerned about a "disease" that Lincoln was apparently greatly worried about at this particular time. But the evidence points to nothing other than to hypochondriasis, wherein one believes himself to be suffering from some nonexistent disease. The distance to Cincinnati was comparatively great in 1841, and Lincoln evidently considered his condition not sufficiently grave to warrant the time and expense. A record of a physical and mental examination by a man of Dr. Drake's experience and learning would have been of much value, particularly to historians seeking a medical background.

Lincoln had the good sense to turn now to his friend and competent physician, Dr. Anson G. Henry. On Jan. 20, 1841, he wrote to Congressman John T. Stuart of Springfield, then in Washington:

Dear Stuart:

I have had no letter from you since you left—no matter for that—what I wish now is to speak of our Post Office. You know I desired Dr. Henry to have the place when you left; I now desire it more than ever—I have within the last few days been making a most discreditable exhibition of myself in the way of hypochrondrism and thereby got an impression that Dr. Henry is necessary to my existence—unless he gets that place he leaves Springfield. You therefore see how much I am interested in the matter.

We shall shortly forward you a petition in his favor signed by all or nearly all the Whig members of the Legislature, as well as the other Whigs.

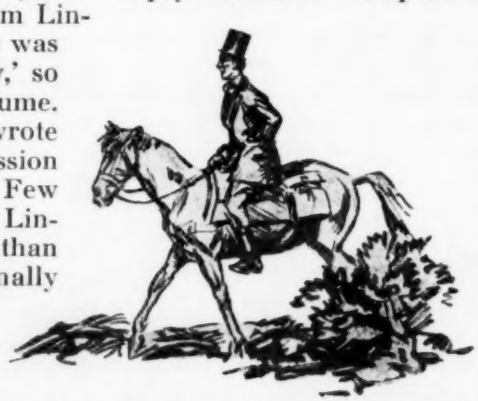
This, together with what you know of the Doctor's position and merits, I sincerely hope will secure him the appointment—my heart is very much set upon it.

Pardon me for not writing more; I have not sufficient composure to write a long letter.

As ever yours,

A. Lincoln.

Lincoln now had the diagnosis; and much was made of hypochondriasis in those days. One of the standard medical reference books was the Encyclopedia of Practical Medicine, published in London in 1833. In it, Volume II, pages 548-557, some 4,000 words are devoted to hypochondriasis under the subtitles: "Definition and Characteristics of the Disease," "Descriptions of the Phenomena," "Diagnosis," "Causes," "Pathology," "Treatment." Hypochondriasis enjoyed the distinction of being classified as a disease; now it is considered only as a manifestation of a psychoneurotic temperament. Osler's Modern Medicine mentions the word hypochondria only to distinguish it from, or rather to associate it with, neurasthenia, a word that now is replaced by the word psychoneurosis.



But whether the condition is termed hypochondria, neurasthenia or psychoneurosis, it has fear as a dominant element, and is caused by overwork and worry. As a rule, it is accompanied by varying degrees of emotional depression; the patient is unhappy and is often made so because of a hyperconscientiousness. The symptoms of psychoneurosis are difficult to describe because they vary greatly and depend largely on the personality of the patient. With our knowledge of Lincoln we can readily picture him during this period of work, worry, fear, inferiority and other complexes, as suffering from that particular infliction.

By way of treatment, his fears must first be quieted; his nutrition must be improved and,

as all physicians from Sydenham to Osler have urged, he must plan for a change of scene and climate, for new faces and novel surroundings. So Lincoln was told of that which ailed him. Lincoln was a man of intelligence, and Dr. Henry must have given him a careful reasoned explanation of his condition. For he referred to his illness correctly as a "nervous debility," and derisively as "the hypo"; and he began to improve.

We shall see now how well Dr. Henry brought his patient along. Three days after writing to Major Stuart, Lincoln finds himself sufficiently composed to write him a long letter, mostly of political matters, and devotes a little more than one paragraph to his health. The latter is still quite deplorable, but he is entertaining Dr. Henry's idea of "a change of scene." On Jan. 23, 1842, Lincoln wrote his friend:

Dear Stuart:

Yours of the 3rd instant is received, and I proceed to answer it as well as I can, though from the deplorable state of my mind at this time, I fear I shall give you but little satisfaction. . . .

For not giving you a general summary of news, you must pardon me; it is not in my power to do so. I am now the most miserable man living. If what I feel were equally distributed to the whole human family, there would not be one cheerful face on the earth. Whether I shall ever be better, I cannot tell. I awfully forebode I shall not. To remain as I am is impossible; I must die or be better, it appears to me. The matter you speak of on my account you may attend to as you say, unless you shall hear of my condition forbidding it. I say this because I fear I shall be unable to attend to any business here, and a change of scene might help me. If I could be myself, I would rather remain at home with Judge Logan. I can write no more.

Your friend as ever,
A. Lincoln.

On Feb. 5, 1841, he again wrote to Major Stuart but does not mention his health this time, which is evidence of further improvement.

The only really intimate friend that Lincoln ever possessed was Joshua F. Speed, the young man who a few years before had shared his bed with the penniless young stranger. Speed had invited him to visit his home in Louisville, Ky., to which place, as soon as his work permitted, in midsummer, the still distraught man fled. A few luxurious weeks of changed climate and scenery on that Southern plantation, a bit of mothering from the parent who presented him with an Oxford Bible as something "good for the blues," the tonic companionship of the sister, and the sympathetic understanding of the friend himself were as a "balm in Gilead" to him. He returned with his friend to Springfield once more restored and set on his feet.

Yet there had been an annoying fly in the balm. He had had a bad time with a Louisville dentist. In a long, interesting letter to Speed's sister Mary, he writes:

. . . when we reached Springfield, I stayed but one day, when I started on this tedious circuit where I now am. Do you remember my going to the city while I was in Kentucky to have a tooth extracted and making a failure of it? Well, that same old tooth got to paining me so much that about a week since I had it torn out, bringing with it a bit of the jaw-bone, the consequence of which is that my mouth is now so sore that I can neither talk nor eat. I am literally "subsisting on savory remembrances."

By the middle of October he was again busy in the game of politics and in the pursuit of his profession. And though his mind continued to brood, time and work, the great palliatives, were having their way. So that when he wrote to Speed, who had gone again to his Kentucky home, on Feb. 8, 1842, "You know the hell I have suffered on *that point*," he could say, "I have been quite clear of "hypo" since you left; even better than I was along in the fall."

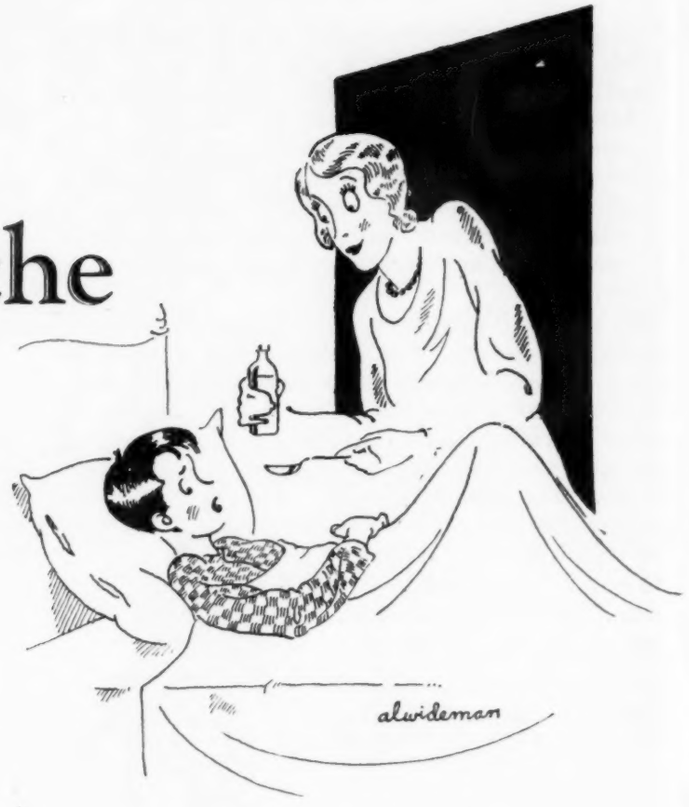
And then on the thirteenth, he postscripts another letter, "I have been quite a man since you left." And so he was. During June, Martin Van Buren, the former president, was entertained in Rochester, Ill., by a group of politicians which included Lincoln, who "kept the company convulsed with laughter till the small hours of the night." Mr. Van Buren later stated that he never had spent so agreeable a night in his life. And in September—over some newspaper chaffing of the Honorable James Shields, which involved Mary Todd and her friend Julia Jayne—he "fought" the broad-sword duel with two-fisted Dr. Merryman as his second. But his nimble wit turned a serious affair into a farce.

Lincoln, indeed, seemed to be himself again. But shrewd Dr. Henry evidently was thinking of a more complete cure for his hypochondriacal patient. By fall, in the home of a certain incorrigible match-maker of Springfield, Lincoln and Mary Todd were once more brought together. Dr. Henry's efforts were soon rewarded; for on Nov. 4, 1842, in his thirty-third year, Lincoln and Mary Todd were quietly "united for better or worse." As William E. Barton so nicely puts it: "These two people, who were divinely created to irritate each other, were also constituted in such fashion as to be necessary to each other's comfort and peace." Abraham Lincoln was an introvert and Mary Todd an extrovert! One week later he wrote a friend: "Nothing new here, except my marrying, which to me, is a matter of profound wonder." From now on, Lincoln had something to think of outside of himself! Mary Todd Lincoln saw to that!

Lincoln's attack of hypochondriasis was secondary to his "forebodings" over Mary Todd, and had as an underlying predisposing factor, a psychoneurotic temperament. *(To be continued)*

Johnny's Stomachache

By RACHEL ASH



Purgation may spell perforation.

WHEN Johnny wakes up suddenly with a violent stomachache what does the average parent do? "Must have been eating a lot of trash," grumbles father; "hot dogs, soda water or something of the sort." Mother or grandmother produces the castor oil bottle and with the united assistance of all the adults a tablespoonful of the deadly poison is poured down Johnny's throat. I say deadly poison advisedly, for in the presence of abdominal pain of unknown origin it is never safe to administer castor oil or any other laxative. Many a child that should not have died lies in his grave because of this fatal error.

If Johnny had an infected finger and kept wiggling it, how soon do you think it would get well? There would probably be no improvement until the finger was kept at rest. Only then would the defensive mechanisms of the tissues be given an opportunity to combat the infection. Fortunately, movement of an inflamed finger is painful so that Johnny will prefer to keep it at rest.

Pain Is Nature's Danger Signal

Suppose, however, that instead of the finger it is Johnny's appendix that is infected. Nature's warning is the pain in the abdomen that aroused the family. To favor the healing of the appendiceal tissues softened by the inflammation, a motionless intestine is desirable. Into Johnny's defenseless stomach, however, goes the dose of castor oil charged with the duty of setting the intestines into activity, thereby rushing the contents of the bowel toward the injured area. Under the pressure of the increased strain the softened wall gives way, releasing into the peritoneal cavity the germ-laden contents of the appendix—not to mention the castor oil. Peritonitis results, and Johnny's hold on life becomes precarious indeed.

Are you wondering what should be done for Johnny's stomachache? First and foremost, send for the doctor. Don't ask the druggist or the neighbors to suggest treatment. The druggist has been trained to compound prescriptions, not to make a clinical diagnosis. You would call in no one but a master plumber or carpenter to repair defects in your house; why do you think your inexperienced neighbor good enough to treat your child?

Early Diagnosis May Save Life

While the doctor is on the way, keep Johnny quiet. Medicine and food may both do harm. Use either hot or cold applications to relieve pain. An enema is inadvisable until a medical examination makes certain that there is no serious trouble in the abdomen. Remember that if inflammation is present it is desirable to keep the intestines as much at rest as possible so as to favor healing.

Perhaps you wonder where the work of the doctor comes in if our objective is to favor a natural cure. Some one has aptly stated that just as a river may produce an electric current under the direction of an engineer, so in many illnesses Nature does most of the healing but only under the guidance of a wise physician. To begin with, the physician must decide whether the trouble lies in the appendix.

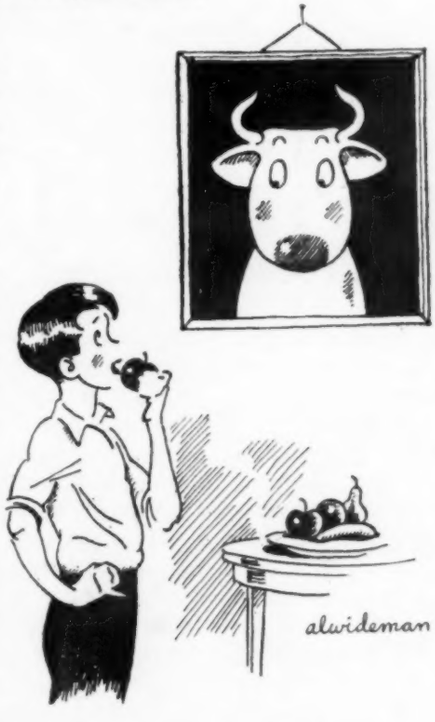
Since it is the inner lining of the appendix that is constantly subject to injury, inflammation usually starts at this point. At the onset

there are no guiding signs enabling the doctor to locate the source of pain, because practically all such illnesses of the interior of the intestine localize their pain in the upper abdominal regions above the site of the solar plexus. It is only when the outside, or peritoneal, coating of the appendix becomes involved that the characteristic tenderness and muscle rigidity situated in the lower right side develop.

As soon as a study of the temperature, pulse rate and white blood cell count, together with examination of the abdomen, convinces the doctor that the inflammation is not being checked and that the peritoneal wall of the appendix is becoming involved, he will recommend immediate surgical intervention so that the diseased appendix may be removed before rupture occurs. If all such appendices were taken out within the first twelve hours, the mortality from appendicitis would be negligible.

I know few more trying moments in a doctor's life than those in which he is worrying over a case of abdominal pain, watching for the warning signs that indicate danger ahead unless surgical intervention is obtained. Delay in calling the physician until unmistakable signs of peritonitis are present will simplify the diagnosis for him, but will result in a stormy illness and possible death for the patient.

Johnny's pain may be due to sudden obstruction, such as occurs when part of the intestine becomes twisted upon itself or otherwise constricted so as to cut off the supply of blood. When deprived of the nutriment brought by the circulating blood the cells of the body die rapidly. Such deaths, or so-called gangrene, of the bowel may make their appearance in so short a time that even minutes are precious if operation is to save the life of the patient. If the family fools around with home remedies, by the time the doctor is called the sole function remaining to him may be the signing of the death certificate.



Children with neglected teeth often bolt their food; stomachache results.

The dangerous types of abdominal pain are stressed first because of the seriousness of a late diagnosis in such conditions. Less dramatic causes, of course, may play a part. There are even pains for which castor oil is a good remedy. Old-fashioned green apple colic still exists; that is, acute disturbance due to the eating of indigestible food. But in such instances there is frequently associated diarrhea, and the doctor's examination will disclose none of the signs of a surgical condition of the abdomen. A word of warning is in order here. Even if you know your child has been overindulging in apples or berries or corn, the pain may be something more than colic. Many an attack of appendicitis has been initiated by dietary indiscretion of this sort.

For the making of an accurate diagnosis a complete examination of the child is essential. A youngster seems to get a stomachache at the beginning of an acute infection as readily as an adult does a headache, and the symptom is just as little a clue to the diagnosis. Many upper respiratory infections—cold and sore throats—are associated with pain in the abdomen. There have been various theories to explain this anomalous location. A small child may have genuine difficulty in locating the source of discomfort. In other cases toxic substances circulating through the body settle in the lymph glands of the abdomen and cause them to swell painfully just as do the tonsils in the throat. Or the pain may be due to neuralgia of the nerves that innervate the muscles of the abdominal wall.

The doctor therefore must include in his examination careful inspection of the nose and throat. Nor may he neglect the chest. Pneumonia, especially of the lower right lung, has a way of first disclosing its presence by pain closely resembling that of an acute appendicitis—a resemblance that is exceedingly confusing at times. Similarly, inflammation of the covering of the heart frequently refers its pain to the abdomen. Children suffering from rheumatic fever often complain of abdominal pain that may be referred from the heart or may result from rheumatic infection of the lining coat of the abdomen or of its muscular wall.

Recurring chronic abdominal cramps require as careful a study as does the sudden acute attack, in order to get at the source of the trouble. A diet that brings on constipation may play a part. Frequently the cause is digestive disturbance resulting from excessive starch or milk in the diet or from the incomplete mastication of foods—especially fruits and vegetables. This habit of bolting food may be the result of poor training or may arise from the presence of decayed teeth that make chewing painful. Perhaps the child may have practically no chewing surface with which to masticate. Such a condition

exists when neglect and consequent massive decay of the first teeth have necessitated the removal of the early molars and bicuspids before the permanent teeth were due to arrive. Such children are left with as few teeth as those of an infant in its second year. Minced or strained foods should be fed until the new teeth appear, so as to obviate the swallowing of large indigestible morsels of food.

More rarely, low-grade, long-continued inflammation of various types may be the source of discomfort—chronic appendicitis, tuberculosis of the abdominal lymph glands or peritoneum, muscular rheumatism, bladder infections and a host of more unusual conditions within or without the abdomen. If correction of the poor habits of eating fails to bring relief, all these possible causes must be sought for.

Especially during the adolescent age does a type of colic occur seemingly due to spasm of the muscles of the intestine arising from incoordinate activity of the nerves that influence its movement. In these children with nervous instability it is a mistake to prescribe treatment that emphasizes the local origin of the pain. The child as a whole must be treated by careful supervision of the routine of his life to avoid overstimulation, reassurance to clear away any apprehension that the pain may have aroused, and possibly mild drugs to lessen the nervous irritability and muscle spasm.

It is clear that Johnny's stomachache may or may not be due to trouble in Johnny's stomach. It may lead us to a consideration of Johnny himself and the complexity of his life. It may arise from causes as remote as the presence of decayed teeth, sore throat, pneumonia or a diseased spine. Its origin may be nothing more serious than a slight indigestion or it may be some grave intestinal condition requiring an emergency operation. Each of these widely differing causes will demand a different type of treatment. In view of the manifold possible sources of trouble it is often difficult for even an experienced physician to analyze the situation. Certainly it is no task for an untrained member of the family lightly to undertake. Above all, castor oil is never the drug first to be considered.

This paper will accomplish much if only this one important fact shall have been impressed on its readers: Never give a laxative for abdominal pain unless you are assured by medical examination that there is no acute inflammation or intestinal obstruction present. Purgation otherwise may spell perforation. Don't help fill the cemetery with victims of your mistaken treatment!

While Still Well, Protect Yourself Against Cancer

IN THE beginning cancer is a local disease. At first the cancer cells in that spot are not malignant but are simply abnormal cells changed by injury or by chronic irritation.

Dr. Joseph Colt Bloodgood, authority on cancer, declared in a recent address that prolonged experience has convinced him that the prevention and cure of cancer today depend on this view.

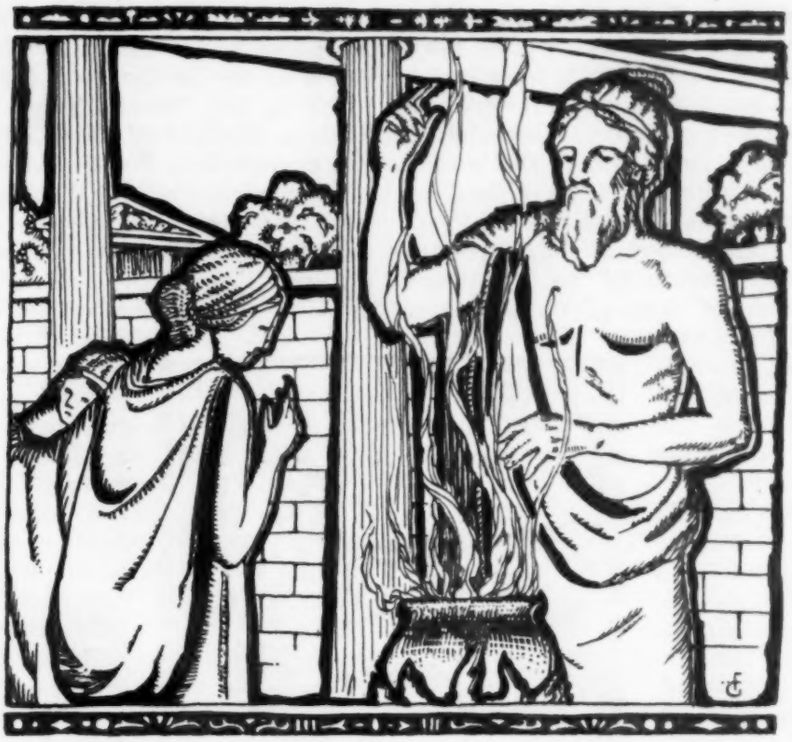
The signs and symptoms of an abnormal area which is not cancer and which never will be cancer and the signs of an abnormal area which precedes cancer or is the earliest stage of cancer itself are identical. Therefore, protection against death from cancer, at present, is first purely educational. Every person must be persuaded to report to the family physician the moment any warning sign appears.

Greatest protection comes with routine annual examinations by a doctor or a clinic selected with the greatest care and visited for the first time while well.

A part of the regular routine of the physical examination of women should be an examination of the breasts. All mothers furthermore should have a semi-annual pelvic examination. The only way a physician can save a woman from serious cancer of the breast is by distinguishing a real lump before the glands of the breast are involved. Chances are that if a woman goes to her physician just as soon as she observes anything unusual, the warning will be of such a character and the examination of such a decided finding that no operation or irradiation with x-rays or radium is necessary.

"The prevention of cancer of the cervix rests upon the proper repair and relief from injuries and chronic irritations of the cervix, which follow the birth of a child. The beginning, therefore, of the prevention of cancer of the cervix is during the postnatal period; the final prevention depends on semi-annual pelvic examinations of mothers, the proper selection of cases for microscopic study of tissue removed from the abnormal cervix or scraped from the lumen of the uterus because of abnormal symptoms, and the proper use of sufficient amounts of radium by competent radiotherapeutists. Today, less than 10 per cent of mothers are thus protected, although many receive postnatal care," Dr. Bloodgood maintains.

Every woman should realize that any unusual observation during menstruation, between periods or during the menopause are warning symptoms that demand an immediate proper examination by a competent physician.



By
BERNARD
FANTUS

The Doctor Serves

AS THERAPEUTICS, in its two subdivisions, prophylactic and restorative, is the chief end and aim of the physician's work, it may be surprising for many to learn that the word is derived from the Greek "therapon," meaning "servant." This lowly original meaning of the term may seem in marked contrast to the mental picture most of us have of the masterful person we call "doctor" or the pompous individual who styles himself "healer." It was, however, actually a wise and trained servant or slave who, in classic Greece and Rome, attended the wounded or sick warrior and applied the then known remedies. True, there were in those times also the healers, certain members of the priesthood who made a pretense at supernatural powers; and who, in point of fact, knew more of the natural remedies than the slaves by reason of traditions handed on secretly from generation to generation as part of their craft.

Why then does the doctor of medicine, the lineal descendant of that ancient priest caste, prefer to style himself therapeutist or servant rather than curer or healer? It is modesty born of knowledge, for he knows that Nature heals. All the doctor can do is to serve the best interest of the patient, while Nature works the cure.

This wonderful curative power of Nature is, on the whole, nothing more mysterious than is life itself. It is indeed a part of the vital process, so well defined by Herbert Spencer as the "continuous adjustment of internal relations to external relations." Sickness then is nothing more or less than life maintaining itself under abnormal conditions. It is the function of the therapeutist to remove the abnormal conditions, the cause; or, if he is unable to do so, the effect; or, if it is impossible to do either, to permit life to maintain itself as comfortably as may be under the abnormal circumstances.

Specific therapy, or treatment that has a special curative relation to the disease, is unfortunately available to a limited degree only, as we have but few specifics. When it is available, therapy achieves some of its most conspicuous triumphs. As examples may be mentioned the use of quinine in malaria, of certain arsenicals and mercury in syphilis, of thyroid in hypothyroidism, of insulin in diabetes mellitus, of iron in certain forms of anemia, of diphtheria antitoxin in the treatment of diphtheria, and of tetanus antitoxin in the prevention of tetanus.

When specific therapy is not available, the physician is by no means helpless. Like a plant, disease can, in general, become established only when three forces cooperate: the seed, the soil, and something that does the sowing. In tuberculosis, for instance, in which we have as yet

no way of killing the tubercle bacillus (the seed), cure is often compelled by making the body (the soil) unsuitable for its growth, because of exuberant vitality, by means of rest, graded exercise, good food, fresh air and sunshine. Just as the germs of decay cannot attack the leaves of the tree as long as they are well nourished, so the tubercle bacillus cannot flourish in the thoroughly healthy human body. When, to cite another example, by reason of age or other ineradicable condition of lowered resistance, a person becomes unduly susceptible to colds, we can still maintain health by means of climate that minimizes the liability to chilling (the thing that does the sowing).

When the doctor can do nothing against a disease along the lines indicated above, should he proceed to knock out its manifestations as the movie hero knocks down the villainous gang besetting my lady fair, according to the slogan Contraria contrariis curantur, imputed to the so-called allopath; or should he obey the law Similia similibus curantur, embraced by the so-called school of homeopathy? If he is wise, he will commit himself to neither doctrine. Disease is not as simple an affair as some simpletons seem to imagine. It is a complex interplay between destructive and restorative phenomena. Inflammation, for example, is generally a wholesome reparative reaction the antagonizing of which, as by the excessive use of cold, may in case of infection lead to disaster. Fever favors development of immunity. As long as it remains within bounds of harmlessness, it is not to the patient's best interest to reduce it.

Coughs, Fevers May Be Helpful

Most coughs are useful in aiding in the expulsion of offending material, and so are the many diarrheas. Any one who indiscriminately attempts to check all coughs, diarrheas and fevers acts just as foolishly as a policeman who attempts, in a pitch-dark alley, to interfere with his club in a fight between a holdup man and his victim. He may hit the robber, but the chances are great that he may knock out the citizen instead. There are some kinds of cough and diarrhea that the physician may check all to the benefit of the patient. The only way to discover these is to understand the case thoroughly; that is literally what diagnosis means.

The diagnosis must be sufficiently complete for the doctor to comprehend whether the natural reaction is adequate and needs no therapeutic interference, whether it is deficient and needs stimulation, or excessive and needs subduing. For Nature works according to general laws and is essentially blind in her actions. It takes, for instance, a long time and much suffering for Nature to get rid of a decayed tooth or a piece of dead bone that the surgeon can remove in a few minutes.

Surprisingly often does a natural reaction lead to a vicious circle: as, for example, stagnation causes the contents of the first part of the large bowel, the cecum, to become so foul as to produce spasm of the distal colon, which in turn leads to still greater stasis in the cecum. The physician secures therapeutic triumphs by breaking in on a vicious circle at its most accessible point. By soothing the spastic distal colon by means of oil enemas, the physician relaxes the spasm and permits the escape of the offending material.

Symptom therapy, that is, securing the relief of distressing symptoms to the extent of making the patient as comfortable as his best interests permit, is another way in which the physician serves. Assuaging pain is, next to prolonging life, the doctor's most important business. Nevertheless, the physician worthy of the name will not remove pain without at the same time doing all that can be done to remove its cause. For well he knows that most commonly pain is a danger signal. Many a wreck results from the unwise use of pain killers. Throttling the headache of eyestrain without relieving the strain leads to further ruin of the eyes. Soothing syphilitic headache without putting a stop to the intracranial inflammatory process that it indicates permits this process to ravage man's most precious tissue with the ultimate establishment of grave and incurable disease of the nervous system. Killing kidney headache, without protecting the kidney against further damage, only too often kills by way of uremia. Even in hopeless and malignant cases, such as inoperable cancer, the physician is able to serve. Here he can use his art of pain annihilation to an unrestricted degree and provide comfort, inspire courage and dispense cheer.

Physician Assists Nature on Default

In incurable nonmalignant conditions, such as hardening of the arteries, Bright's disease, valvular heart disease, and disturbed bowel function from extensive intestinal adhesions, the physician can do a great deal more than that. He can so adjust the demands life makes on the crippled organ as to permit the handicapped individual to enjoy a comfortable and efficient existence for a much longer period than Nature unaided would have granted. Indeed, by peri-

odic health examinations such conditions may be discovered in their incipiency and, by wise management, kept from reaching a handicapping degree for a long time.

One of the most important functions of the physician is to recognize and properly to take care of the patient's own "disease-picture complex," which means what the patient himself thinks about his ailment and how he feels toward it, for to the patient this complex represents the real disease. Curiously enough, this complex is more often wrong than right, for the degree of physical suffering is no indication of the seriousness of the condition; fears may exaggerate and hopes minimize the appreciation of the real seriousness of the case. Thus tuberculosis often is so painless a disease that, for this very reason, it kills because of neglect of its early curable stages. Neuritis, on the other hand, as painful as any cancer can be, is generally not serious. If, however, a person with neuritis is convinced that he has cancer, he suffers quite as terribly as though he really had the malignant disease. These are the cancers that are cured by mental impression.

Suggestion may produce, aggravate and lead to neglect of disease, as well as help in the cure. A person may be just as truly unable to move his limbs because his mind has accepted the idea that he cannot do so as if the nerves going to the muscle had been cut. Yet the latter condition can only be recovered from slowly, as the nerve tract becomes reestablished; while the former may be cured instantly, seemingly miraculously by a sufficiently accepted countersuggestion.

Of late, psychoanalysis has revolutionized our understanding and treatment of many formerly obscure nervous ailments, though an informal psychoanalysis has long been practiced quite as successfully by experienced physicians. It is now a generally accepted fact that nervousness is the result of improper modes of living, and that it is curable in proportion to our ability to discover what is wrong in the mode of living and to remedy it.

Teaching the proper mode of living is as decidedly the physician's work as is the prescribing of drugs: for it should be remembered that "doctor" means "teacher."

We therefore see that, in spite of the self-healing tendency of Nature, the physician is by no means superfluous. The true physician is a student of Nature (Greek *physis*), who by his understanding of her laws as they relate to health serves his clients in the same manner as a lawyer does in the affairs of human law.

Have You a Co'd in deh Head?

When a steak has lost its savor, when your coffee has no flavor,
And your smeller gains perceptibly in size—a,
Here's a certain diagnosis of the cause of your neurosis—
It's coryza!

When your tongue is thick and furry, when your eyes are going blurry,
And you sneeze with all the fury of a geys—a,
When your beak is red and tender like the wind-up of a bender—
It's coryza!

When your voice gets flat and fuzzy and your ears grow dull and buzzy,
When your temperature takes just a little rise—a,
Put away procrastination and duck fever's elevation
From coryza!

All your pals will flock in legions from both near and distant regions
Bringing therapeutic counsel and advice—a,
Disregard their friendly babblings, do not heed their kindly gabblings
On coryza!

It is medicine's proved dictum to a sad and sputtering victim
That he get beneath the blankets if he's wise—a
And let nature's own elixir be the sure and rapid fixer
Of coryza.

—W. T. O'CONNOR.

The Smallest Farms in the World

The bacteriologist's farm—a culture dish showing colonies and the wire loop.

By JOHN KOOPMAN

THE smallest farms devoted to the production of diversified crops are those used by the bacteriologist to cultivate bacteria. These bacterial farms are contained in glass dishes 4 inches in diameter and ½ inch deep.

By means of these small farms or petri dishes as they are called in the laboratory, the bacteriologist is able to find out whether or not a sample of milk is fit to drink, a certain body of water safe for bathing or a particular food free from contamination.

Bacteriology has borrowed many of its methods from agriculture, because both sciences have many points in common. Bacteria are too small to be identified by the naked eye, just as some seeds are. A food may contain bacteria in such small numbers that they might be overlooked, just as a few seeds might be overlooked in a sample of soil; therefore, something besides mere observation is necessary before bacteria can be detected and identified.

Several hints as to the way in which the bacteriologist must proceed in order to solve his problem can be obtained from the method a farmer would follow in solving his problems.

If a farmer was given a sample of soil containing a mixture of many kinds of seeds, how would he proceed to identify each kind?

By spreading a representative sample of mixture on a table, he would be able to identify several kinds of seeds differing conspicuously from the others. The majority of the seeds, however, might be unfamiliar to him and he would be compelled to admit his inability to state what plants they represented.

One way in which he might proceed in order to identify each of the seeds in the mixture would be to sow them on his farm. Some weeks later by examining the plants that had developed he could tell with certainty what kind of seeds had been given him.

The bacteriologist proceeds in about the same manner when he is asked to identify the bacteria present in a food or in an animal exudate. He sows a representative sample of the mixture on a small farm contained in a glass dish and waits for it to grow.

The bacteriologist has many advantages over the farmer in the sowing of his material and in the identification of his crop. No matter where

the farmer sows his seed he may not always be successful in raising a full crop. Some of the seeds may require a warmer climate than he can provide. The soil may be too moist, too dry or otherwise unsuitable for the seeds to develop properly.

The bacteriologist prepares his soil in such a manner that all these objections are overcome. He usually prepares several of these so-called farms so as to anticipate the soil requirements of every kind of bacteria that may be present. He provides the proper amount of moisture by adding or removing water from the soil and regulates the temperature by means of an incubator.

The farmer will have to wait several weeks for his seeds to develop and even then he may overlook some of the plants that are slow growers. The bacteriologist, on the other hand, usually harvests his crop in two days.

The farmer is beset by the growth of weeds; the bacteriologist is also troubled by the growth of unwanted organisms. These organisms are present in the air and on almost everything. They are, therefore, present in the soil and on the dishes used by the bacteriologist.

It is necessary to remove the contaminating organisms from the soil because it would otherwise be difficult to tell which organisms were planted and which were present accidently. The farmer is compelled to pull out these weeds or to remove them in some manner that entails considerable labor because the operation must be performed at frequent intervals.

The bacteriologist removes these contaminations in a simple manner. He does this before he plants anything. The dish containing the soil is placed in a steam chamber and heated to a temperature so high that life is destroyed.

In the laboratory, the soil on which the organisms are planted is called a culture medium. Culture mediums are combinations of nutritive substances, such as human beings might prepare for their own consumption. Meat broth made by extracting beef or veal with water makes an excellent culture medium. This broth is added to ordinary gelatin and the mixture is poured while still hot into a glass dish. On cooling, a translucent jelly is formed.

When a culture medium with a firmer surface than that of gelatin is desired, agar, a sea weed found in Japanese waters, is used. It forms a jelly when added to hot water just as gelatin does.

In order to grow bacteria for identification and study, the worker proceeds as follows: He makes a piece of apparatus to pick up and transfer the organisms. This consists of a noncorrosive metal wire fused into a convenient handle, usually a glass rod. The wire is then heated to redness in an open flame to sterilize it. This is done each time the wire is used. After cooling, it is dipped in or passed over the substance containing the bacteria to be investigated. Some of the bacteria will, of course, adhere to the wire. The wire is then passed over the surface of the culture medium which is contained in the small glass dishes.

Ewing Galloway

Sometimes the test tube supplants the culture dish.

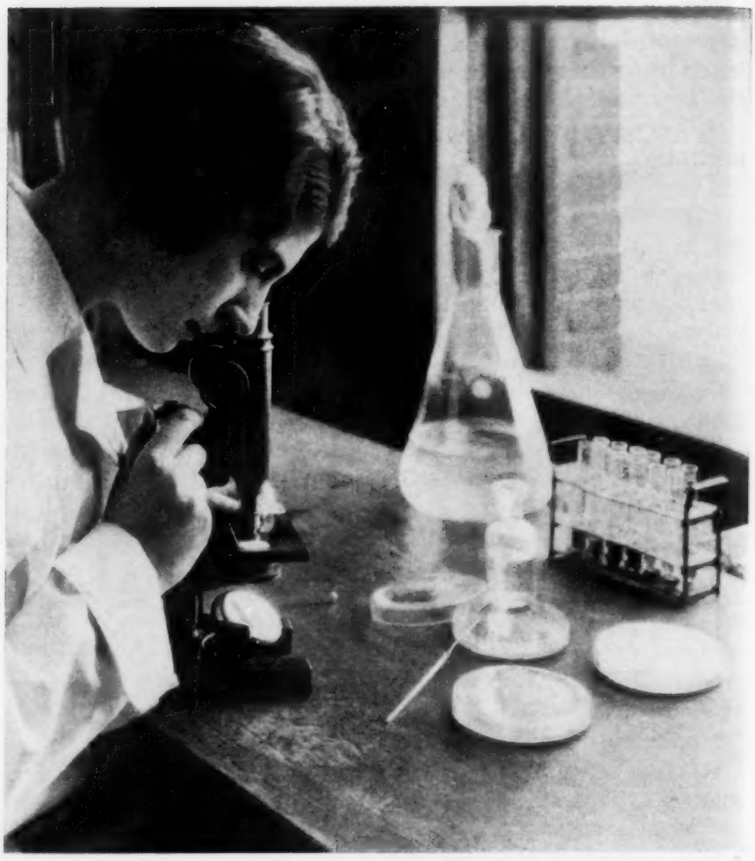
At the point at which the wire first touches the surface of the culture medium, a large number of bacteria will be detached and remain to grow. As the wire is rubbed along the medium, it will leave fewer and fewer organisms, until toward the end of the streak an occasional individual organism will attach itself to the culture medium. These single organisms will be deposited at irregular intervals. The dish is then covered and placed in the incubator.

At this time nothing can be seen on the medium except the depression marking the path of the wire as it traveled over the surface. After twenty-four hours at some predetermined temperature, the dish may be examined to see what has happened. The path of the wire will now be out-

lined by small circular masses of bacteria called colonies.

Where the wire first touched the surface of the medium, the bacteria have grown into large irregular masses because a large number of organisms were left there, but as the path of the wire is followed, numerous separate colonies will be seen more or less equally spaced. Each of these colonies has grown from a single organism that was detached from the wire as it passed over the surface of the medium. These single organisms, being unable to move, have developed into colonies at the exact spot at which each organism was deposited. Two colonies side by side may be quite different from each other, because they have grown from different kinds of organisms that happened to be scraped from the wire as it passed along.

Knowing the type of culture medium used, and the source of the material streaked over the surface, a skilled observer can give a reliable opinion as to the kind of organism that formed the colony. His ability to do this does not depend on his ability to see the individual organisms in each colony but on his knowledge of the kind of colony each organism produces. Some organisms produce colonies with rough edges and others with smooth edges. Some take a raised position, whereas others are depressed below the surface. Colonies also differ in color and shape. These variations aid the scientist in identification.



Under the microscope, the bacteria are identified.

For the purpose of further study or more positive identification, transplants are made from each colony. This is done with the aid of the wire loop mentioned above. It is necessary to heat the wire each time it is used in order to be certain that the transplant is uncontaminated. The wire is applied to a colony that is to be transplanted and the attached bacteria carried to another dish and streaked over the surface. A separate dish is used for each colony.

When the second transplants are incubated each dish will be found to be well covered with many colonies of the particular organism planted. In this way it is possible to produce any quantity of growth necessary to make a complete study.

When this procedure is carefully carried out, a number of dishes will be covered with growing bacteria. Each dish will contain one kind of organism and there will be as many dishes as there were different kinds of organisms present in the original mixture. Dishes that contain colonies all of one kind are called pure cultures because they were presumably grown from a single bacterium.

With these pure cultures at hand, it is now possible to proceed with further tests that will result in the classification and subsequent identification of each organism.

One means of classification is to note what effect the bacteria have on the culture mediums on which they grow. Each bacterium in the process of reproducing itself needs food. This food must necessarily be added to the soil upon which the bacterium grows. Therefore, if several types of culture mediums are prepared, each one containing a different ingredient, it will be possible to find out what food or foods the organism uses.

The ingredients most often used for this purpose are the various sugars, such as grape sugar, milk sugar and several others not as well known. In addition to the sugar a blue dye is mixed with the culture mediums. This dye has the property of changing color if the culture mediums become acid. When a sugar is fermented, it usually produces an acid that turns the dye from blue to red. This being so, each colony on the dish will be surrounded by a zone of red on a field of blue. If the sugar has not been fermented, the dye will remain blue. Some bacteria will also produce a gas when a certain sugar is fermented.

When a sufficient number of facts have been accumulated regarding the characteristics of an organism, identification has begun. Some of

the characteristics that are used as aids in the identification of bacteria may be listed as follows: rate of growth, size, color, and general appearance of colonies, action upon sugars of various kinds, action upon other foods, such as blood, and the presence or absence of gas.

Another important aid to the identification of various kinds of organisms is their behavior when they are dyed with aniline dyes.

How Stains Are Used

The action of dyes, or stains, as they are usually called in the laboratory, is investigated as follows: A small amount of the growth is removed from the culture medium by the wire loop and spread on a glass slide. The slide is then immersed in a solution of an aniline dye. It is washed with water to remove the excess dye and examined under a microscope of high magnifying power. The individual organisms can then be seen as minute bodies that have taken up the dye. By this means their form, size and structure can be noted.

Although bacteria can be divided into classes according to their form, there are so many distinctly different organisms that have the same form that it is necessary to find additional characteristics by which to judge them. This is provided for in the differences in their physical make-up, which causes some of them to give up the dye when they are placed in decolorizing solution. For instance, the tubercle bacillus is difficult to stain, but after it does take up a certain dye it retains it; on the other hand, most other bacilli dyed with the same dye and easily mistaken for the tubercle bacilli lose their color when they are placed in a decolorizing solution made of alcohol and a weak acid. If a slide has been prepared by placing on it a quantity of some material that may contain tubercle bacilli, the bacteria that have given up the dye are to be considered as belonging to another classification. Many dyes are used to identify organisms.

In addition to the kinds present, one may want to know how many bacteria are present. In this case the procedure is somewhat different. If the material investigated happens to be a sample of milk, the milk is diluted in certain definite proportions with sterilized water, because undiluted milk may contain more bacteria than could conveniently be counted.

The culture medium is heated until it liquefies. The diluted milk is then added to it and mixed thoroughly. The mixture is allowed to cool until it again becomes a jelly. Any bacteria present in the milk will now be firmly fixed in the jelly. Each organism will proceed to grow into a colony when properly incubated.

If the milk and the culture medium are carefully mixed, the colonies will be uniformly distributed throughout the medium. With the aid of a small pocket lens these colonies are counted; each colony represents one bacterium originally present in the milk.

Knowing the amount of milk added to the culture medium, it is easy to compute how many bacteria were present in the original sample. If the number is greater than experience has shown to be a safe limit, the milk may be condemned. Methods similar to this are used in counting the bacteria in ice cream, oysters and water.

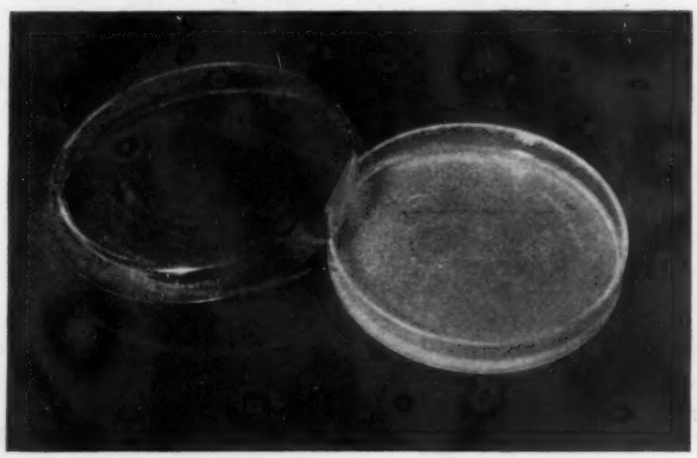
Speed Needed in Identifying Diphtheria

As rapid as this method of growing and identifying bacteria may be, it is not as rapid as is required under certain circumstances. When children contract sore throat it is necessary that the bacteria present be identified in the shortest possible time in order to learn if the bacillus of diphtheria is present.

In the first place the petri dishes are dispensed with. The amount of culture medium needed for a diphtheria diagnosis is the amount that can be put in a small test tube. This culture medium is made from beef broth and beef serum. It is prepared from beef serum because experience shows that this serum promotes the growth of the diphtheria bacillus and inhibits the growth of other organisms.

The planting of the organisms in this case is done by the physician at the bedside. He rubs a small swab of sterilized cotton over the throat of the child and immediately transfers the organisms thus collected to the surface of the culture medium. The tube is then incubated and in about fourteen hours a heavy whitish growth is visible.

The growth is removed by the wire loop and spread on a glass slide dyed with an aniline dye known as methylene blue and is ready for direct examination under the microscope.



Were it not for the fact that the bacillus can be recognized by its appearance alone, it would be impossible to make a diagnosis in this disease in the short time mentioned and the history of the control of this deadly disease would be much more difficult than it is at present.

The child should be made comfortable at table. A footstool is a valuable aid.

Your Child's Posture

By
SAMUEL ADAMS COHEN

AS A rule, good posture is concomitant with good health, comfort and comparative ease of mobility. On the other hand, a child with poor posture is frequently tired, under par physically, and subject to various physical discomforts and disturbances. Poor posture almost always develops slowly and is the result of a combination of circumstances, many of which can be prevented.

Let us take, for instance, the apparently simple matter of the child asleep. It is better, so far as sleep and posture are concerned, to discourage the use of pillows and to have the child sleep on a stiff mattress or a mattress that is made firm by placing wooden slats under it.

Another example is the commonly overlooked item of furniture. The dining room table and chairs are seldom adjusted to the child's height, and he is obliged to sit in a cramped, uncomfortable and maladjusted position. Because of this constant abuse to the muscles of the neck, back and feet, a maldevelopment and improper symmetry of the child's body results. The thoughtful use of pillows, footstools and other such devices that act as a support or adjustment to household furniture should assist in the prevention of postural defects in children.

Let us consider, furthermore, the abuse to the child's posture that sometimes results from wearing clothing improperly; this is noted particularly in girls who have their dresses and sometimes their stockings supported from the shoulders by means of straps that frequently pull the shoulders forward and thus distort the shape of the chest. It is better for the child's posture if the weight of these garments is supported from the hips and if the stockings are rolled below the knees. If the shoulders must be utilized to bear the weight of the garments, the inner part of the shoulders should always be used. Heavy wraps and coats are often worn in such a manner as to cramp and bear down on the muscles of the chest and back. Ill fitting shoes and too short stockings cause the child to walk in an abnormal manner, resulting in poor posture. Parents are sometimes forgetful of the fact that children's feet grow rapidly and that their shoes and stockings are soon outgrown even if the right size and shape were obtained in the first place. Properly fitting clothing and household furniture are cited merely as small but significant factors that parents must consider in child development, for good posture means a body mechanism that can function with the greatest efficiency and the least effort.

The way a little girl is dressed affects her posture.

Even at birth individuals vary greatly in their stature and constitution. For example, the child who has a narrow head, a small lower jaw, a long chest, long extremities and long tapering fingers is a distinct type and cannot have the same postural development as his cousin whose physical structure

even at birth is characterized by a round head, a short thick neck, a broad chest and short, stubby fingers. Between the lean and the stocky types there are many variations. Regardless what type the individual is, good posture is easily detected by the manner in which the child carries himself when he sits, stands or walks. If the child stands or walks with apparent comfort and ease, has the feet parallel and gripping the ground, the pelvis rotated anteriorly, holds the abdomen in and has the chest elevated, in addition to having the head erect and held high on top of a pair of square shoulders and normal spinal curves, that child may be said to have good posture. He seems to have vigor, walks with a springy step, and has a general appearance indicating good cheer.

No pillow and a stiff mattress contribute to the best sleeping posture.

The child who has a poor posture frequently holds the head to one side, is usually bent forward, has uneven shoulders, a flat and caved-in chest, a sagging abdomen, a curved spinal column (which is often emphasized by the prominence of the scapular bones, or wings, sticking out of the back), a tilted pelvis, and feet that are usually turned outward and pronated. In addition, the child's appearance is usually one of chronic fatigue. Whether faulty posture causes chronic fatigue or is a consequence of it, is of secondary consideration to the fact that the two conditions usually, but not always, coexist in the same child.

Malnutrition Causes Poor Posture

Malnutrition is perhaps one of the greatest contributors toward the development of poor posture. Sometimes malnutrition may be due to chronic infection. Often some postural defect creeps in because of the child's poor nutritional state resulting from an attack of some disease such as tuberculosis, measles or pneumonia. Sometimes an unsatisfactory or hastened convalescence from a serious illness leads to the development of poor posture or even deformity as a result of disturbances of the balance of certain muscles. Both malnutrition and undernutrition show their effects by altering the muscle tone and so weakening the muscle fibers that the muscles are unable to function properly and to act as a support.

The distended abdominal wall is a fairly common observation in malnutrition. This results in protuberance and sagging of the abdomen and interferes with the proper relationship of the intra-abdominal organs; at the same time it interferes with the normal development and respiratory movement of the chest, all of which often result in some distortion of the spinal column. Sometimes gastro-intestinal disturbance, indigestion and poor appetite, which occur frequently in malnutrition, can be attributed to faulty posture. As a matter of fact, poor posture, chronic fatigue and malnutrition are all to be found in many children who are below par physically.

In addition to chronic fatigue and malnutrition, other physical defects swell the number of children having faulty posture. Children who breathe abnormally—that is, through their mouths—have underdeveloped chests and faulty posture. Often enlarged or diseased tonsils, enlarged adenoids or some other mechanical hindrance or interference in the nose or the throat result in faulty breathing, and abnormal development of posture follows. Far too many children become chronic sufferers from poor posture because they were not taught to breathe correctly; improper breathing results in deformity of the chest walls because the lungs do not have proper äeration.

Poor Hearing or Vision May Affect Posture

Children who have defective hearing or impaired vision of one or both eyes often develop a certain twist of the head in order to hear better or to improve their vision. This soon interferes with the normal balance of the neck and back muscles and causes the other muscles of the back, chest and abdomen to function disharmoniously.

Until recently, rickets, perhaps more than any other factor, added to the ranks of children developing poor posture. Rickets is a condition that affects the growth and development of the child, more particularly by interfering with the normal development of the bones. In addition to bone deformities, rickets also causes overstretching of muscles and a weakening of ligaments that attach the muscles to the bones. Fortunately, rickets can be prevented by the aid of sunlight, fresh air, adequate ventilation and the judicious administration of cod liver oil and other such therapeutic agents, in addition to the all important factor of adequate diet for the fast growing child.

Only a physician is in a position to determine what constitutes an adequate diet for the individual child, and he should always be consulted in all endeavors of child hygiene and nutrition if the best results in the proper development and growth are to be obtained.

There is one other consideration in the development of faulty posture that may be mentioned here, and that is heredity. In many instances heredity seems to be the determining factor that makes for good or bad posture in the child. The child who is born with a tall and slender physique and has long muscles is much more likely to develop a faulty posture than his cousin who at birth is shorter and broader and has firmer muscles.

In regard to the child's development during the first five or six years of life, several things are a source of worry to the mother. First, she usually notices that her infant in the first months of life has what is popularly known as bowlegs. This is practically normal for every child and it tends to disappear of its own accord.

Another item of worry for the mother is that many normal children until the age of 3 years or so seem to have knock knees. By the time the child reaches the age of 5 or 6 years, this condition also tends to disappear. In addition, many mothers are concerned about the appearance and shape of their children's feet. In regard to this, it can only be reemphasized that a physician is the one to be consulted. Not only will he examine the child and attempt to prevent many of the causes that induce faulty posture but he will also advise the mother as to the proper diet, avoidance of infections, and healthful routine, all to the end that the infant will develop and grow normally.

A child having good posture is able to carry on efficiently and to move about with comfort and ease. Moreover, the person with good posture often creates a favorable impression, and with the feminine sex, particularly, this is important.

On the other hand, if neglected, faulty posture tends to become worse as the child grows older. This interference of the body mechanism is a distinct handicap to the child's efficiency and appearance and occasionally brings with it embarrassment and mental discomfort that may prove serious.

Fortunately, with comparatively rare exceptions, good posture is within the reach of all, because faulty posture is a preventable physical defect. Parents who are desirous of giving their children every opportunity should regularly avail themselves of the services of a physician, so that in conjunction with his guidance, skill, knowledge and experience, they will be able to make it possible for their children to be blessed with good posture and thus have the many advantages that go with it.

SUNBATH LUXURY

By Tatiana Boldyreff

SOFTLY brushing the forehead as though to smooth away workaday fatigue and closing one's weary eyes with a gentle pressure of their fairy hands, gold-lined dreams appear unsummoned; gay, ethereal creatures they, with frail, touch-eluding bodies of topaz.

Here in this enchanted kingdom of half-sleep with a band of scarlet-lined gold on the eyes, one's universe seems to be drowning in an amber mist. There are gold fringes to everything.

Drowsily conscious, one is bewitched, watching through half-closed eyelids drops of that golden nectar the sunshine in fanciful play on the foliage, dancing on each still yet vibrant poplar leaf.

In the even, cool blue of the sky not a suggestion of cloud appears; there is only the splendor of the sun.

With sweeping velvet touch, its hot rays envelop one's relaxed body in a close silky veil of spun gold.

Cares, unwelcome impressions, all monotony are blurred out. The resplendent sun retouches all objects, setting them into relief and purging the landscape of drab, inartistic blots. Meanwhile in one's languid mind is woven a web of fantasy.

When Do We Eat---and What ?

By WILSON D. WALLIS

PART II

"WHEN do we eat?" is a perennial question, asked from the cradle to the grave and echoed round the world. In general, the savage eats when he is hungry—if he can find something to eat. Most primitive peoples have two meal-times, one in the early morning, the other in the late afternoon or early evening. The sun is the clock, stomachs are the dinner bell.

"Can't keep a good man down."

Meal-time etiquette is practically universal. In many tribes the women do not eat until after the men have eaten, and very commonly one sex does not eat in the presence of the other. Some natives of Central Africa cover the mouth with a napkin when they eat with Europeans, while among the Zafimanelo, in Madagascar, a man who is ready to eat will, if Europeans are around, retire to the privacy of his room and lock the door. In Ashanti the man who drinks before his inferiors hides his face. Hindus, who do not like to be under observation while eating, will stop eating and throw away the remaining food if a stranger stares at them persistently during the meal. In Tonga it is rude to eat before a stranger, and one who chances on another who is eating will turn the head in another direction as a measure of common decency. In New Zealand only the common people eat in public; in Tahiti, when men or boys eat their lunch they sit on the ground some two or three yards from one another and turn their faces toward a wall, or at least away from their fellow masticators. Indeed, for a woman to eat while others look on is little short of obscene. Among the Orang Laut, of the Malay Peninsula, a woman who desires to eat leaves the hut and finds a place where she can eat privately and unobserved. A stranger who eats in the presence of the Bakairi, a Brazil tribe, shocks the Indians' sense of propriety.

We don't eat crow, porcupine, skunk or snake.

There is, moreover, a hierarchy of foods. Not all foods are of equal rank. Some are eaten as delicacies or are proper on formal occasions, such as a wedding feast, a funeral feast or a banquet; some pertain particularly to religious functions and some are set aside for the gods. Conversely, certain foods are highly improper on such occasions. Who would consider waffles and sausages the proper food for Thanksgiving, or veal cutlets or roast pork (except in some parts of Europe) the proper food for the Christmas table? The Iranians and the Hindus had their haoma, or saoma, which was the sacred drink of the gods, their honey and milk. The Greeks, too, had their ambrosia, fit beverage for the gods. The sacrifice of animals is in many instances an offering of the life of the animal to the god, and the pouring out of the blood is but the symbol of the gift of the animal's life. The odor of the burnt offering ascends to the god, and he is pleased and propitiated.

Even the cannibal may have his preferences for different varieties of human flesh. The aboriginal Australians objected to Chinamen because they were "too salty." The prejudice carries over; the modern Australians impose a head tax on Chinamen. In some parts of the continent the aborigines prefer young girls, and plump ones, while in other tribes the natives eat the late deceased because they thought so well of him that they cannot bear to part with him. To dwell among these peoples and share such delicate sentiments must be delightful,

for among the anthropophagi our friends are our sarcophagi. Yet the tender souls are sometimes subject to remorse:

I shouldn't have eaten
that missionary steak,
Said the cannibal king
with a frown,
For oft have I heard of
the old proverb—
"You can't keep a good
man down."

Burnt offerings please the gods.

Food prejudices are deep seated, and they abound in our civilization. From prehistoric times to the present the aborigines of the New World would not eat mussels, though they were fond of clams and oysters; the settlers from Europe adopted the prejudice of the Indians, and took to the eating of oysters and clams but kept mussels on the forbidden list, with no better reason than that their predecessors in the new land had made this discrimination. In the Old World, the prejudice was reversed; in prehistoric times the people ate mussels, but discarded clams, and to this day that is the case.

Samoans eat fish raw.

We do not eat crow, skunk, porcupine or snake, not because these are not good foods—for they all are—but for no better reason than that they are not on our list of foods, and we resist fundamental innovations in our menu. In England, it is true, rook is sometimes eaten, though rook is merely crow. Here we pity the man who has to "eat crow," as some do after election time.

All primitive peoples are acquainted with the use of fire, and they all employ fire, at least to some extent, in the preparation of meats. The Polynesians, at least in Samoa, usually eat their fish raw; the Eskimos sometimes eat raw meat; their name signifies "Raw Meat Eaters." The Australians cook their food rather indifferently by throwing the entire animal, with the hide on, on a fire. They eat witchetty grubs raw, and to them these are more appetizing than the raw oysters that most Americans of European extraction swallow with gusto.

Wild seeds and cereals are usually prepared by grinding and then cooking in a cake or with meat. The Indians of the Pacific Northwest and the plateau region of North America mashed the seeds of wild berries and fruits, and the Indians of the plains mixed mashed wild cherry seeds with dried buffalo meat to make the nutritious pemmican. The acorn and the cassava were soaked in water to extract the injurious acids that they contain.

In many regions the natives are adept at varying the diet. When the types of foods are narrowly limited, the variety is of the order that prevailed in the boarding-house, in which one day they served meat and potatoes, and the next day potatoes and meat. Within their limits, however, natives sometimes display much ingenuity. Thus the Iroquois have several ways of roasting corn: they pound it into meal or into hominy; they serve it with various kinds of broths or soups, and mix it in varying proportions with fish or deer meat. Spices and flavorings, however, are practically unknown to primitive folk.

Methods of cooking are simple, but they too have specific geographic distributions. The Eskimos employ pots of clay or of soapstone and apply the fire from blubber or moss directly to the bottom of the pot. It is a slow process, and the cooking is usually imperfect. On the Northwest coast the Indians make use of the spit in roasting salmon, or they cover the fish in ashes. In the plains area the predominant method was to dig a hole in the ground, line this with a buffalo skin, pour in water and place heated stones in the water until it boiled. Watertight baskets served as the containers. This method of heating the water was employed in the Southwest and throughout the California area to Alaska. In Oceania the favorite method is to dig an oven in the ground, build a fire in it, scrape away the burning firebrands and lay the food, wrapped in leaves, on the embers. These leaf-wrapped parcels are then covered with earth, and after two or three hours the food is exhumed, steaming hot, thoroughly cooked and flavored by the leaves.

Samuel Johnson boasted that he "could write a better book on cookery than has ever yet been written; it should be a book upon philosophical principles. Pharmacy is now made much more simple. Cookery may be made so too." From primitive folk he might have learned much simplicity.

Since the vitamins have been discovered, a thousand problems have been added to the lot of civilized man. How did the savage fare with his limited diet, his monotony of foods? Beriberi, scurvy and pellagra cruelly have claimed their thousands of victims, all because of a vitamin deficiency. Scurvy was a scourge

He uses a spit to roast salmon.

until the needed vitamin was added to the diet of the sailor. If the proper diet is not supplied, vigor dies.

Primitive children are often markedly potbellied; but in adulthood they usually attain respectable bodily proportions. Some are tall, some short; the tallness and the shortness do not seem to have a constant relation to the food supply. In the New World the tallest groups, it is true, are the buffalo-eating and the guanaco-eating Indians of the northern plains and the South American pampas region. The almost exclusively maize-eating peoples of the Pueblo region of the Southwest are, on the other hand, short of stature, in marked contrast with their plains neighbors. In the Old World, however, there are much greater contrasts in stature between Negrito peoples and their neighbors who, in most areas, have much the same basic food supply. Nutrition influences stature, but each race type and subrace type has a specific pattern of physique within which environmental influences operate, even as they do within the respective sexes, though the sex differences persist.

A native of Tonga turns his head in common decency.

That foods and food supply influence temperament would seem to be self-evident; but that such is the case is not self-evident to the ethnologist, who perceives that there is no thoroughgoing correspondence between these factors. When the Eskimo has gorged with meat and sits in the snowhouse during the long winter, when little outside activity is possible, he becomes morose, irritable, ready to take slights and quick to knife a disturber of his gloomy peace. But food is only one factor in the situation, and it is not possible to assess its importance. Moreover, the savage who fasts today and feasts tomorrow may lead a much more balanced emotional life than does the average civilized man whose food is always ready for him at meal-time on the table of the dining room. The best fed, and more especially the most fed, peoples are by no means always the happiest; perhaps they are seldom that, epicures not excepted. Some one has reversed the old motto and declared that we should live to eat, not eat to live, adding that those who eat to live do not live long. But why not both: eat to live and live to eat? The living makes the eating possible, and certainly the eating is a prerequisite to living.

Sometimes, no doubt, the savage enjoys his food all the more for having had the fun and adventure of securing it, as the fisherman and the hunter in our civilization find the fruits of their expedition the most savory. Yet certainly some foods are more palatable when we have not been occupied with their preparation, or even witnessed it. From tipi plains buffalo to reservation tin-can beef is a long step; but it was not a step upward for the Indian.

A similar change may have been a step upward for us; but certainly we are becoming flabby and edentulous, and too frequently irritable and irascible, whether because of better and ampler food or in spite of it, I do not venture to guess. But there is no justification for the statement that "the struggle with forest and water and animals emphasizes instincts of self-assertion and pugnacity, and the roving habit due to the search for food is associated with want of foresight and alternating states of feast and fast, repletion and starvation exercising a deep influence on religion, custom and social relationships. For instance, the practice of devouring enormous quantities of food at a sitting and of fasting for weeks together causes alternation of abnormal nervous exhilaration with lassitude in which dream and suggestion, sympathetic magic and myth, dance and music easily flourish." The fast that brings the vision is the voluntary fast, not the fast imposed by the economic order.

From plains buffalo to tin-can beef is a long step.

Pioneers of Medicine

Robert Koch

By

Claude Lillingston

FOR centuries the problem of consumption was discussed in a nebulous, long-winded and pedantic manner. "The cause of a consumption of the lungs in general is a vitiated disposition of the mass of blood of the spirits in the nerves, contracted gradually from several procatartick or predisposing causes in which the sharp or malignant serum or water of the blood being separated by the soft or glandulous substance of the lungs does stuff, inflame, and at length also exulcerate the lungs themselves which is the immediate cause of this distemper."

So wrote the distinguished physician Richard Morton in his "Phthisiologia," published in 1694. To us, who know better, this rigmarole seems windy rubbish. It seems to be a pretty general rule that the less we know about anything, the more long-winded and pedantic we are in discussing it.

Though every educated adult knows that Robert Koch discovered the bacillus of tuberculosis, it is probable that only a few have reflected on the significance and magnitude of this discovery. Before it was made, medical science was floundering hopelessly in most turbid waters. Knowing nothing of importance about the causation of consumption, medical practitioners were utterly incapable of fighting it; they could do little more than write pseudo-scientific essays on it, about it and around it. With a few simple experiments, Koch found the key to the problem and completely revolutionized our outlook on this disease.

Koch was born on Dec. 11, 1843, at Klausthal in Hanover, Germany. His father was an official in the Prussian forestry department. Robert was the third child in a family of thirteen. His parents were well-to-do but by no means illustrious, and one of his biographers has drily observed that the only remarkable thing they did was to beget their son Robert. He was educated throughout the secondary school period in his native town. While still in his teens, he proceeded to the University of Göttingen where, in 1866, his last year at this university, he won a prize for an essay on "The Nerve Ganglions of the Uterus." After acting as an assistant physician in a hospital in Hamburg, he settled down as a medical practitioner.

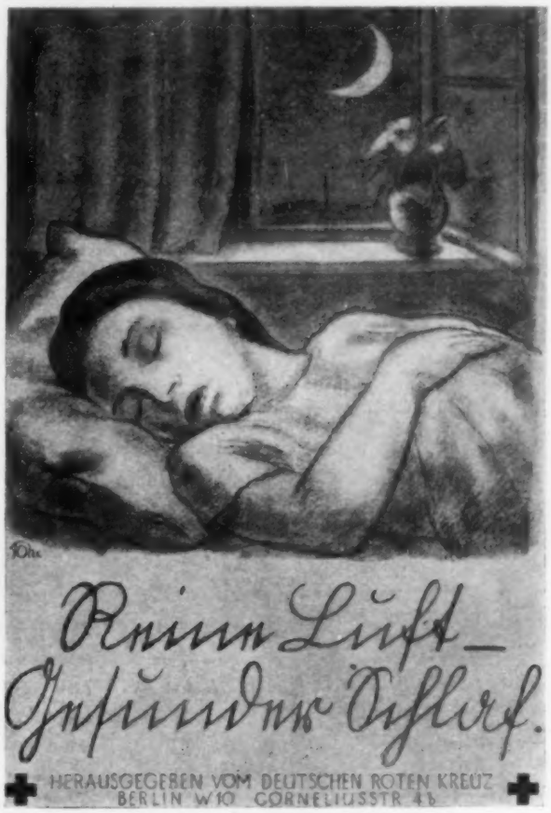
The attractions of medical practice did not hold this alert, serious, scientifically inclined young man for long, and accurate work with a microscope soon began to appeal to him much more strongly than ordinary clinical work. At first his scientific studies were carried out in great isolation; in addition to his microscope, he had little to help him apart from books and his correspondence with other scientists.

The first disease that he submitted to the analysis of the microscope was anthrax, or wool-sorters' disease—a disease that only occasionally attacks human beings but often causes wholesale death in animals, such as sheep. Koch succeeded in cultivating the germs of anthrax outside the animal body, using broth as a culture medium. Inoculating mice and rabbits with his artificial cultures of anthrax bacilli, he succeeded in producing the characteristic disease of anthrax in them.

Koch's work on anthrax, published in 1876, was one of the first and most important milestones in the new science of bacteriology. Before

this date, little was known of the art of separating one germ from another; that is, of obtaining a pure culture of any particular germ. Precision was as the breath of his nostrils, and he laid down certain rules or postulates by which bacteriologists are governed to this day. He insisted that, before any given germ could be identified with any especial disease, that germ must be found in the subject of this disease and in no other; it must be grown in pure culture outside the animal body, and when inoculated into a susceptible animal, it must not only produce the characteristic disease but must also be demonstrable again in this animal.

It will be seen from these exacting and now generally accepted postulates that Koch looked on germs as having almost as definite properties and characteristics as animals. He played with germs as a juggler plays with cards. Having marked his germ, so to speak, he would cultivate it from one generation to another in broth or on the surface of a potato, would inject it into a susceptible animal, and then infect one animal from another. After he had made his germ travel by a great number of conveyances, he would pick it out at the end of the journey and prove that it was nothing more or less than the same germ that had started the journey—a little more or less virulent, perhaps, but that would be all.



Sweet repose, as depicted by the German Red Cross.

The original system of cultivating germs in a liquid such as broth did not facilitate their isolation one from another. The observations that Koch made on potatoes got over this difficulty. He noticed that when a boiled potato was cut in half and exposed to the air in a damp room for a few hours, colonies of germs differing from one another grew on the surface. By picking out just one of these colonies and grafting it on to another potato, he was able to separate one family of germs from another. From this simple experiment he evolved the solid culture medium that, in its most elementary form, consists of sterile meat extract containing liquid gelatine that solidifies after being poured out on a glass plate. When Koch first demonstrated this device in 1881, at the International Medical Congress in London, Pasteur was delighted with it, and is said to have exclaimed: "C'est un grand progrès."

The bacillus of tuberculosis must be stained to be made visible. The first step, therefore, in the demonstration of this bacillus under the microscope was to find a selective stain. At the International Medical Congress in London in 1881, Koch showed a few friends what he believed to be the bacillus of tuberculosis. With his characteristic caution he did not, however, publish his discovery forthwith; it was not till March 24, 1882, that he presented his now famous paper "Ueber Tuberculose" at a meeting of the Physiological Society of Berlin.

At this critical moment, Koch was still a young and comparatively unknown research worker. Consumption, on the other hand, had been known for centuries as a disease of heredity. Medical science was not, therefore, going to abandon tenets as old as the hills simply because this young man thought otherwise. His announcement was not, accordingly, accepted by all his colleagues, though it made a great sensation at the time. They did his announcement this honor that in several civilized countries, including America, England, France, Germany and Italy, they started so-called collective investigations that were to settle the burning question as to whether consumption was an infectious, contagious disease or not. Some 50,000 doctors participated in this gigantic undertaking, and while they were contradicting one another and confusing the issue by airing their views, speculations and prejudices, the young German bacteriologist with his well defined postulates so difficult to ignore or dismiss held the field. There has probably never been a better demonstration of the superiority of the intelligence of the individual over that of the herd.

Koch made two more sensational announcements connected with tuberculosis, and in order to deal with them it will be necessary to break the chronological order of this biography. In 1890, he announced the discovery of tuberculin. He hoped that this substance, prepared from the

tubercle bacillus, would prove a specific remedy for tuberculosis. It is probable that he would have preferred to study this remedy more closely before publishing any claims on its behalf. But thousands of consumptives and their friends were clamoring for a remedy, and his hand was forced. Tuberculin was given in huge doses to patients in the last stages of the disease, and tragedies swiftly followed. In the forty years that have elapsed since those days, an enormous amount of work has been done on tuberculin in an attempt to discover a clue to its safe and successful administration. A few believe at the present time that they have found such a clue. But the medical profession as a whole has come to regard tuberculin as a useful weapon only in the diagnosis of the disease in an early stage; but they consider it a two-edged sword in treatment.

Tuberculosis—Human or Bovine?

In 1901, Koch threw a bomb into a medical meeting in London by declaring that the tuberculosis of human beings was not identical with the tuberculosis of cattle. By intimating that man is little, if at all, susceptible to the bacillus provoking tuberculosis in cattle, he implied that the vast sums spent on combating tuberculosis in cattle were being wasted in so far as they were spent in an attempt to reduce the incidence of tuberculosis in human beings.

Lord Lister, who presided at this meeting of the British Congress of Tuberculosis, remarked on this occasion that Koch had made out an exceedingly conclusive case as far as the immunity of cattle to the characteristic tuberculosis in human beings was concerned. But Lord Lister did not consider that Koch had conclusively proved the converse proposition, that human beings are immune to the tuberculosis of cattle. Koch's challenge was taken up by research workers all over the world, and the upshot of their collective studies was to confirm Koch's views as to the immunity of cattle to tubercle bacilli of the human type. On the other hand, it is now certain that Koch underestimated the danger to human beings, children in particular, from tuberculosis in cattle.

We may now return to the early eighties to pick up the thread. In 1883, an alarming outbreak of cholera in Egypt and certain of the Mediterranean ports stirred not only the quarantine authorities but the whole public health service of Europe into activity. The cause of the disease was then not known. Who was more likely than Koch to discover it? The German government promptly dispatched him to Egypt at the head of a scientific expedition. It soon incriminated the "comma" bacillus, given this name on account of its characteristic shape. But to verify this finding, the expedition proceeded to India. It was not, however, till the Hamburg cholera epidemic broke out in 1894 that Koch's findings in Egypt and India were irrefutably confirmed. Shortly after his return from India, Koch was attached to the Hygiene Institute of Berlin, and in 1891 he was appointed director of the newly created Royal Institute for Infectious Diseases, later named Koch Institute.

During the last thirty years of his most active life, Koch's activities were two-fold: teaching and research work at home, and scientific expeditions abroad. At home he surrounded himself with disciples eager to imbibe the spirit and master the elaborate technic of their leader; and so effective was the team-work in Koch's laboratories that he and his assistants discovered the causes of no fewer than ten human diseases in a dozen years. These diseases were tuberculosis, cholera, typhoid fever, diphtheria, erysipelas, tetanus, glanders, pneumonia, epidemic meningitis, and plague.

The scientific expeditions conducted by Koch were remarkably fruitful. He spent much time in the Tropics and did useful work in associating the three types of malaria with three distinct types of parasite. We find him in 1896 in Cape Colony, studying the rinderpest, which was threatening to wipe out the cattle in South Africa. In 1897 he is again in India, investigating plague; and it is thanks to the team-work he instituted that the flea has been incriminated as the spreader of plague from rat to man.

The Right Man and the Right Moment

What were the qualities and opportunities that made this small, dapper, serious Prussian of obscure lineage such a world force? They included a clear insight into the heart of the problems he tackled, resourcefulness in technical difficulties, and the rare gift to drive a team in such a way as to get the best out of each member of it. Perhaps the last trait was his greatest gift of all; the more we study the details of the great discoveries connected with his name, the more we find his the performance of an orchestra, rather than that of a soloist. Koch was a great, a very great conductor.

As for his opportunities, Koch himself was the first to give them due credit for much of his success. Bacteriology was a new and almost unexplored mine when he came on the field. As he remarked in 1908, at a dinner given in his honor by the German Medical Society in New York: "If the success really was greater than is usually the case, the reason for it is to be found in the circumstance that I came in my wanderings through the medical field upon regions where the gold was still lying by the wayside." Rare modesty!

Koch's frequent exposures to the bacillus of tuberculosis had not been courted with impunity, and arterial changes, complicated by influenza, culminated in angina pectoris. He was only 67 years old when death overtook him on May 27, 1910—a great little man.

By J. B. McDOUGALL

The Duke of York examining a suitcase made in one of the workshops.

Preston Hall, the Sanatorium of the British Legion Village in Kent; below is the department in which wooden buildings of all kinds are made.

A British Village for the Tuberculous

IN THE county of Kent, in England, is a village, the only one of its kind in the world. The entire population consists of ex-soldiers suffering from tuberculosis of the lungs. Each man has passed through the sanatorium section of the village and has been graduated to residency for the rest of his life in this unusual place. There you will find him, with his wife and family, leading a normal life, working at an occupation suitably adapted to his physical resources but still under medical supervision. It is my privilege to be the director of this unique community, and during my visit to the United States in the summer of 1930, I met many colleagues, especially in New York and at Saranac Lake, who were deeply interested in this work on behalf of the consumptive at the British Legion Village in Kent.

Our patients are admitted to the sanatorium section of the village in much the same way that patients are admitted to sanatoriums elsewhere. But while our patients are under treatment they are invited, and invariably choose, to take such exercise hours as may be prescribed in one of the workshops attached to the sanatorium. Of such workshops we have four; woodwork, printing, fiber and leather suit case making, and wood-graining. Our patients collaborate in such a way, under skilled managers, that they are able to manufacture articles that sell in the open market to the British public. Some of our goods are actually sold in the shops of Toronto,

Canada. We find, further, that we can make a profit on the most of the goods we manufacture. This profit goes to pay wages to a number of men who are graduated from the sanatorium, and who take up residence in the village.

Some idea of the magnitude of this health venture may be obtained when I say that during the last six years our patients and graduates to the village have manufactured and sold more than one million dollars' worth of goods. There are 150 British ex-service men now resident in the village, and every one has had consumption in some form or other. No longer is there any need for these men to worry about returning to ordinary industrial conditions of town life, for they have a security at the British Legion Village that would be denied them in the outside world. If, by chance, a relapse of tuberculosis follows, medical attention is available for them at once. Furthermore, the medical staff of the village sees to it that the wives and families of the men also come under supervision. One of the outstanding features of our work is that, so far, we have been unable to trace a single case of tuberculosis among the 300 children in the village. This satisfactory state of affairs is due, no doubt, to the repeated routine medical examination on which we insist, even when there is no real indication of disease. In other words, our policy is to ferret out disease before it manifests itself rather than to treat it when it actually arrives. Relapses are rare. The health standard, considering the degree of disability of the workers, is high.

Close to the London Market

The British Legion Village is situated some 35 miles from London in a district free from dust and smoke. And yet, within a circle of 50 miles radius is a population of more than twelve million people. Much of the business of the industries is done with this population and, despite the trying months of industrial depression through which England has been passing, it is satisfactory to note that not one tuberculous patient has been obliged to stop work for one single hour through lack of employment.

We realize that it is as important for the tuberculous patient to have dollars in his pocket as it is for him to be free of active disease in the chest. The plan works well. The population is a happy one in spite of its physical incapacity.

For social activities, there is a village hall in which cinema shows, whist drives and occasional dances are held. The delightful houses in the village are well cared for by the "settlers," as they are called. Each man pays his rent weekly out of the wages he earns. In this, as in a multitude of other ways, he becomes an independent unit, no longer fearing poverty, which so often leads to relapse.

Community Is Self-Supporting

But to the casual visitor the feature that probably appeals more than any other is the esprit de corps existing throughout the village. Whether it is in the sanatorium section, in the workshops or in the houses of the village, a splendid spirit of comradeship and cooperation prevails—a relic, no doubt, of the Great War. Our men are drawn from all parts of Great Britain, and it is really amazing to see how this heterogeneous throng mixes together as if they had known one another all their lives.

The fact that staggers most visitors—and we have had thousands from all parts of the world—is that this community is entirely self-supporting. In addition to paying for victuals, wages and rent, we can actually show a small profit at the end of the financial year. True enough, the British Legion has donated the capital necessary for the buildings, workshops and machinery, but it costs this ex-service men's organization nothing to run the village from year to year. Depreciation is written off in the usual business way, and the normal allocations are made for all items such as heating, lighting and postage, against each department. The photographs attached to this article speak louder than words, but even photographs give readers but little idea of the glorious ideals behind pioneer work of this description. It is my sincere belief that in years to come the village settlement principle will be accepted much more frequently, and when it is, light and happiness will come into the lives of many whose only alternative is darkness and despondency.

Your Health Manners

By J. Clarence Funk

A BOOK is published in New York and in other large cities that lists the names of those who, because of family standing and wealth, represent the leaders in the social world. It marks those mentioned as belonging to the inner circle of America's blue blood. To this Four Hundred falls the lot of setting the standards in polite social practices, which are then followed by the other fashionables and near fashionables througout the country. Today, however, there exists another exclusive set which, while comprising a much larger group, is equally artistocratic. It represents the "Who's Who In Health."

This fact will be surprising to many who illogically conclude that a first-class physical condition is an automatic affair. Indeed, one does not need to be observationally keen to realize that a vast number of American citizens even go one false step farther in their reasoning. These persons conclude that well-being will continue gloriously to flourish even though one consistently slaps it in the face.

However, as many foolish persons have learned to their sorrow, Old Mother Nature, despite all the wonders of present-day civilization, still sits on her throne and continues to rule with a kindly though firm dictatorship. Failing to recognize her supreme authority, literally hundreds of thousands are annually ostracized by her, victims of inexcusably bad health manners.

If the proposition were merely losing social caste, matters would perhaps not be so bad; friends can always somehow be found. But when the consequences of unapproved manners result in illness, in the removal of the real joy of living, and often in death itself, the price thus demanded for revolutionary conduct is obviously too big a one to be paid.

Years ago when life was less complex and "refined," many of the rules and regulations laid down by nature were much easier to observe than they are today. The cardinal physical requirements of fresh air, exercise, rest, moderation and simple habits were followed not only by choice but of necessity. Actually, life was geared down to a speed that the average person under the existing conditions of life could maintain with little or no physical detriment. In fact, had medical science and modern prevention against communicable disease reached the high plane of efficiency that they enjoy today, old age, instead of being more or less the exception, would then have stood an excellent chance of being the rule.

It is not necessary to detail the ravages that directly resulted from ignorance in combating smallpox, cholera, typhoid fever, diphtheria, tuberculosis and other scourges that claimed their victims in despairingly large numbers during "the good old days." That story already is well known. Nor is it required to recount the thrilling progress that has been made in methods of disease prevention and control. That also is familiar to most of us. But the sad part of the story is that a vast number of persons somehow conclude that public health efficiency automatically removes all obligation

POLITE PRACTICES

Standards Set by Aristocracy of Health

1. Breathe plenty of fresh air day and night.

2. Obtain sufficient rest in every twenty-four hours.

3. Eat food of all kinds in sufficient quantities, not too much or too little.

4. Stay clear of drugs always, unless a physician prescribes them.

5. Take adequate exercise daily.

6. Keep the alimentary system regular.

7. Drink plenty of water.

8. Avoid the excessive use of stimulants.

9. Eliminate all devitalizing habits.

10. Work and play, but never to the breaking point with either.

11. Obtain a physical examination by a reputable physician annually and make semi-annual visit to the dentist.

12. DON'T WORRY NEEDLESSLY.

on their part to do anything in the furtherance of their own physical welfare.

Now, if it were possible to delegate the care of personal health to public servants then such an attitude might be entirely reasonable. Albeit, that is exactly what cannot be done. Nature is entirely too individualistic for that.

Therefore, we have the black picture of thousands on thousands of people surrounded by wonderful safeguards not even dreamed of a generation ago, literally devitalizing themselves, living on a low health scale, and some actually though unconsciously committing slow suicide, simply because their present health manners are crude and thoughtless.

A Commonsense Code

Consequently, the need of adhering to a health code seems to be real. It was inevitable that such a code should come into being; and while it is strict it is by no means harsh. It merely calls for playing the greatest and most important game, that of life itself, according to the commonsense rules ordained by nature. It contains little, if any, excitement. It does not in the least appeal to the modern and much to be deplored thrill sense. In fact, the code is like all great and worthwhile things extremely simple and untheatrical.

The thoughtless are attracted by the baubles and tinsel of human existence. For instance night life, with all its devitalizing concomitants, attracts a pitiably vast army. Old Mother Nature is rudely shoved aside, insulted and laughed at by the unthinking or unheeding victims, drawn to its seductions like moths to a flame. For a while the Old Lady may apparently be indifferent to this heartless conduct. But the thing that people forget is that she never forgets. Her code of aristocratic and commonsense living remains, as always, the final arbiter.

Moreover, she refuses to be bluffed by wealth, by social standing, by custom or by achievement in any of life's departments. She brooks no "crashing the gate" in her select crowd. She demands obedience to her fundamental laws; and not receiving it, she refuses admittance to the only group on this gay earth that actually represents aristocracy—those capable of getting out of life in terms of vigor, vitality, happiness and longevity the utmost possible.

After all, what do a million dollars and a social-register standing amount to if one is but half alive? What do even the plaudits of the crowd count for if abounding health, which is every one's birthright, is nonexistent? Name, family, money, these and all the other worthwhile matters are reduced to an irreducible and pathetic minimum if physical and mental health of the individual are not what nature meant them to be.

Nevertheless, in spite of this obvious fact and the addition of "horrible examples" among one's own acquaintances, bad health manners still claim more adherents than do the good ones.

But this does not mean that the nation's leaders and thousands of others are not alive to the Health Code and are not seriously abiding by its rules. For that exactly is what they are doing.

One has but to talk with those who are "in" to discover the major secret of their success. Better than any one else they realize that unbounding health not only has been responsible for their distinction in the world but, what is more important, for the supremely keen enjoyment they get out of living in it.

"Why any one should be satisfied with a half loaf or less when they can have a whole one, is beyond me," remarked one of the elect the other day. "Very early in my career I decided that the joy of existence, in its most fulfilling sense, was after all the one primary aim in life. Therefore, while I have paid much attention to my various business endeavors, I have also used an equal amount of head work in conducting what to me is the most important business of them all; namely, my health welfare."

This gentleman's statement practically sums up the whole proposition. It is little wonder then that the men and women who represent the worthwhile names of the day are without exception devotees of the code of health. Well do they understand that to get the most out of life they must put the most into it. Consequently, no matter how distinguished in their respective lines of endeavor they may be, they appreciate their limitations and recognize the absolute power of the fundamental controller of their destinies—Old Dame Nature herself.

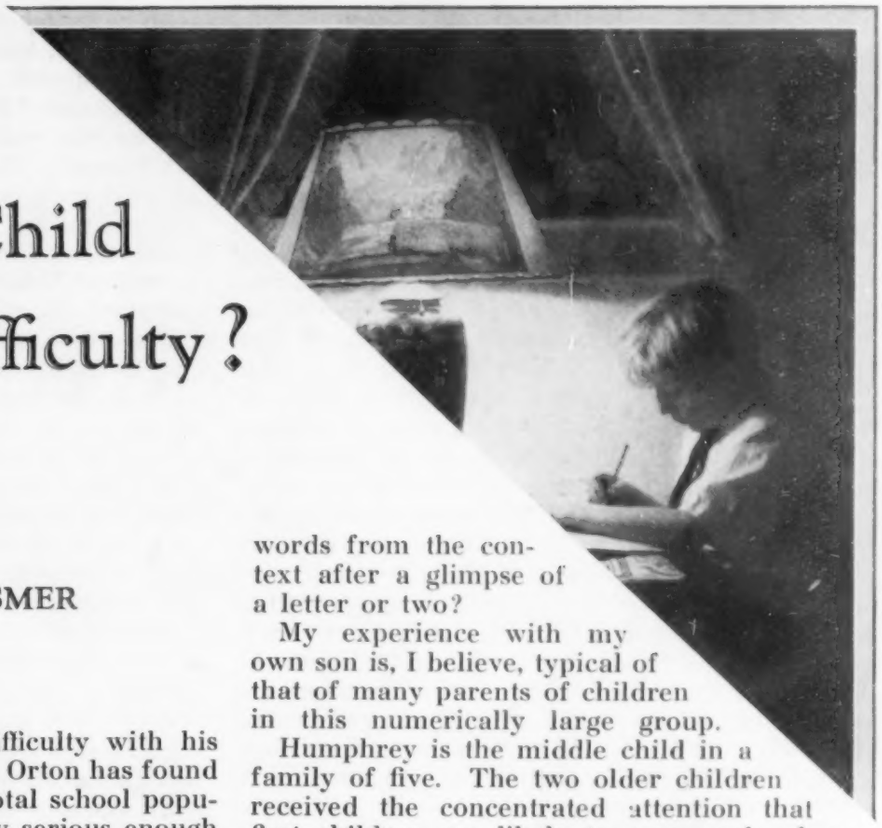
The Aristocracy of Health

Moreover, this aristocracy of health fortunately invades all strata of society. Thousands of men and women of all ages are disciples of rational living. To them the follies of the jazz-mad age represent a greater sacrifice than they are willing to make. Such things they wisely leave to the smaller and so-called "smarter" fry. They know that it is from that class that the recruits for mental hospitals, suicide lists, semi-invalidism and premature funerals are most frequently drawn, and like the thoroughbred aristocrats they are, they simply avoid such people and their hijacking living habits.

Nor is moderation a wet blanket in any sense. On the contrary, it makes for the greatest enjoyment and happiness. As a matter of fact, Nature is prodigal with her display of affection for those who humor her. They represent without question life's superfavorites.

Finally, it should be understood that the Health Code sets forth only a few natural rules. It merely asks that they be conscientiously followed.

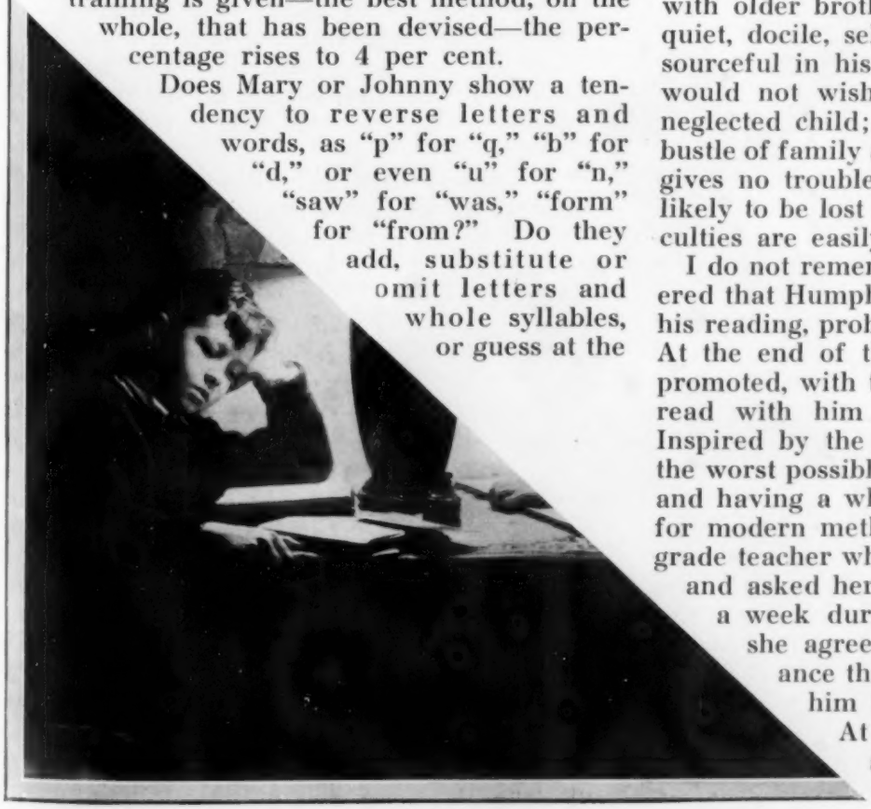
Has Your Child Reading Difficulty?



By

GLADYS E. HOSMER

DOES your child have difficulty with his reading? Dr. Samuel T. Orton has found that 2 per cent of the total school population have a reading disability serious enough to be classified outside of the group of merely "slow readers," ruling out the rare pathologic cases of congenital word-blindness. In schools in which the sight method of teaching reading is employed, in which some ninety words are learned in their entirety before phonetic training is given—the best method, on the whole, that has been devised—the percentage rises to 4 per cent.



Does Mary or Johnny show a tendency to reverse letters and words, as "p" for "q," "b" for "d," or even "u" for "n," "saw" for "was," "form" for "from?" Do they add, substitute or omit letters and whole syllables, or guess at the words from the context after a glimpse of a letter or two?

My experience with my own son is, I believe, typical of that of many parents of children in this numerically large group.

Humphrey is the middle child in a family of five. The two older children received the concentrated attention that first children are likely to command, when physical care, behavior and educational training are a novelty to the parents. The younger two are lively and aggressive, exhibit the comparative precociousness in their activities and in their use of language and partake of the usual degree of "spoiling" characteristic of children with older brothers and sisters. Humphrey is quiet, docile, self-effacing, imaginative and resourceful in his power of amusing himself. I would not wish to infer that he has been a neglected child; nevertheless, in the press and bustle of family and schoolroom life, a child that gives no trouble and demands no attention, is likely to be lost in the shuffle. Indeed his difficulties are easily overlooked.

I do not remember precisely when we discovered that Humphrey was significantly behind in his reading, probably early in the second grade. At the end of that year he was provisionally promoted, with the understanding that I would read with him during the summer months. Inspired by the idea that a mother is usually the worst possible teacher for her own children, and having a wholesome and awesome respect for modern methods, I went to a former first-grade teacher who was exceptionally competent and asked her to tutor Humphrey five times a week during the vacation period. This she agreed to do, with optimistic assurance that she could undoubtedly bring him up to grade within that time. At the end of the summer, she admitted, with puzzled chagrin, that she had made little or

no headway and that there must be something the matter with the child's eyes! Accordingly, I took the boy to the best oculist that I knew of in Boston, and he reported Humphrey's eyes better than normal!

The next two years were repetitions of the same story: provisional promotions in school, made partly because I begged that he should not be put back with younger children, and thereby made to feel discouraged and inferior, and partly because the child's good disposition and evident conscientious effort endeared him to each successive teacher; extra tutoring by a series of skilled persons who began with the enthusiastic conviction that they could conquer the difficulty; standardized reading tests at regular intervals that registered a slight, regular improvement but nothing like the normal rate of progress. I began to feel discouraged.

"Yes, we'll let him go on," the school principal said, for the third time, "for he's doing well in his other work, but presently, when he has to get his history and geography from books, he will have to stay behind. I will arrange for him to do some extra reading in a lower grade."

Much to the surprise of every one, when that dreaded time came, Humphrey got on well in both those subjects.

"Does he depend on what he gets in class from hearing other children recite?" I asked the current teacher.

"Partly that," she replied, "but that does not wholly account for it; some of it he must be getting from his study of books."

His written work continued to be abominable. He had his facts, but his spelling was beyond words to describe. I noticed, however, that he did better with new and comparatively difficult words than he did with those that he should have acquired early; he still confused "were" and "where," "there" and "three," and made similar errors, but he was evidently working out some system for himself. No longer was a distaste for the printed page so obviously apparent; the more mature nature of the material now somewhat more accessible to him was proving interesting, though at home he rarely picked up a book or paper of his own volition unless to look at the illustrations in some of the popular science magazines.

The middle child, if good, sometimes gets little attention.

H. Armstrong Roberts

Then the entire family went to Europe for a year, and Humphrey's formal education was interrupted, except for a few months spent at a progressive school conducted along the lines laid down by Madame Montessori. Here, with the language barrier, little was accomplished beyond some excellent instruction in clay modeling, in which he showed himself unusually adept.

One evening, I was sitting with him in the living room of the pension where we were spending the winter. As he struggled with sentences in an elementary reader, a wise and experienced woman, prominent in educational circles in her native Western state, overheard our efforts and asked if she might help. Her grasp of the problem that confronted us and her assurance that we were dealing with a not uncommon problem, which was caused neither by stupidity, mental deficiency nor faulty methods, was the first heartening and encouraging gleam of light that had reached me.

At her suggestion, when I returned to America, I got in touch with a friend who had contacts with the work being done at the Harvard Reading Clinic, and with her aid I followed leads that set me on the trail of the research work done by Dr. Orton in a midwestern city.

I learned that, according to Dr. Orton's theory, Humphrey's handicap was mainly physiologic in its nature and therefore to be overcome by adequate methods of training and retraining. It appears from scientific experimentation that the focus of central vision in the retina of the eye, used in the acquisition of reading, has a double connection with the brain, the nerve fibers dividing and going one-half to each hemisphere, while the peripheral or outer zone of the retina, which receives only general impressions, has connections with only one-half of the brain, that on the opposite

side from the eye involved. This double visual sensation is apparently needed to complete the association of a printed symbol with its meaning, and similar activity in other higher visual levels is involved in the process of being able to read and write.

The Left-Handed Child

We learn to read and write from the visual record planted on the dominant hemisphere of the brain. In left-handed persons, the dominant side is the right; in right-handed persons it is the left, and this controlling pattern becomes a physiologic habit, while the other set of recorded images in the opposite hemisphere becomes elided or suppressed. Watch a baby's first attempts to handle a spoon or pencil; presently, with or without intervention, he settles to the regular use of one hand. Failure of this physiologic process of elision at the proper time, from whatever cause, is the explanation of most reading difficulties. Sometimes it is the result of forcing a child to use his right hand, if he is normally left-handed. This also has been known to cause upsets in the speech area and to result in such defects as stammering. Sometimes it is the result of a variation in the child's make-up, such as left-handedness coupled with right-eyedness, or vice versa.

The two halves of the human body are antitropic; that is to say, reversed symmetrically, so that the images stored in the silent area of the nondominant hemisphere are opposite, or reversed, copies of those in the dominant one. Hence the confusion that arises when a child is confronted with a choice of images, and therein lies the explanation for the reversal of letters, for "mirror writing," and for the tendency to skip to the end of a word and then go back to the beginning.

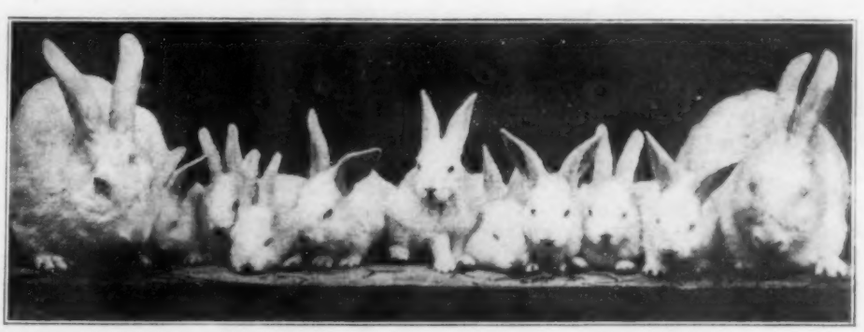
Obviously, retraining a child who is thus confused is largely a matter of establishing a consistent habit of moving in the right direction in reading and writing. No single method is the golden one. The most promising of these is compelling the child to trace, then write, words or syllables and words, while sounding them orally. Silent letters must always be traced. Careful drilling in articulation should be stressed. Constant practice must be given on the consonants and vowels that are habitually reversed. Contrary to the usual practice, the child should be encouraged to follow his reading with his fingers. A useful book containing puzzle forms, incompleted sentences and other exercises to intrigue the child's interest in reading is Gates' "The Improvement of Reading."

To return to Humphrey: we are not yet out of the woods. His spelling is still atrocious. But last spring, at the end of the seventh-grade year, he achieved his first honest-to-goodness promotion, the first in his entire school career. The principal said that he had earned it. Last month his report in silent reading was "excellent"; when I asked his teacher if she was not a trifle optimistic about it, she told me that there could be no mistake as the mark was based on the results of the Columbia tests. Large factors in coping successfully with his difficulty have been Humphrey's own cheerful, dogged perseverance and the kindly cooperation and patience of his teachers. Another important factor has been the boy's own comprehension, through careful explanations, of where the difficulty lay; he knows just as much as the rest of us do about it.

Looking Ahead

We have ahead of us the problems that high school will bring, particularly in regard to the study of foreign languages. If Humphrey is now virtually translating whenever he reads, how can he face a double translation?

While it is true that a child's intelligence has no bearing whatever on reading disability, since it is found as frequently in a child with a high I. Q. (intelligence quotient) as in one with a low mental rating, every parent with a child so handicapped must consider whether a college preparatory course is worth the candle. These children normally excel, as if by way of compensation, in mathematical and mechanical ability, and in unusual manual dexterity. Why not direct their efforts along ways in which they may capitalize these abilities and gain the most from their endeavors?



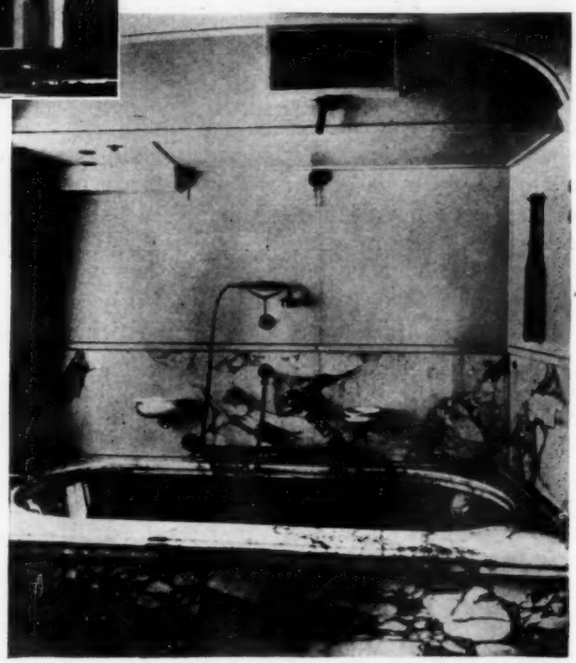
Hedrich-Blessing

A PENETRATING IDEA

Sunlight is most welcome in the large building of glass and aluminum pictured to the left. Milwaukee is the proud possessor of this recent structure.

The traveling dentist, below, will visit ninety schools of England and treat 11,000 children.

Acme

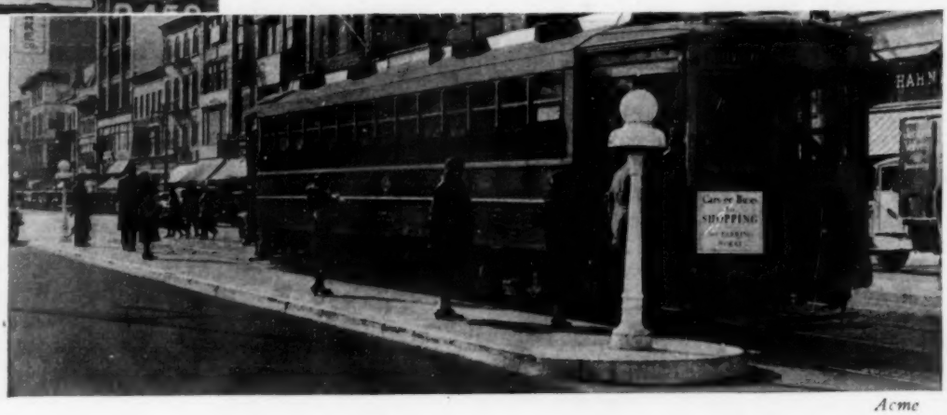


Herbert Photos

Mustapha Kemel Pasha enjoys the healthful exuberance of bathing even in his private railroad car.

ISLANDS

Concrete aisles in Newark assure waiting street car pedestrians of safety.



Acme

BEWARE TRAFFIC VIOLATIONS

Natives of Cochin-China are pictured to the right learning the three "R's" as a prerequisite to traffic policing, the province's first attempt at regulation.

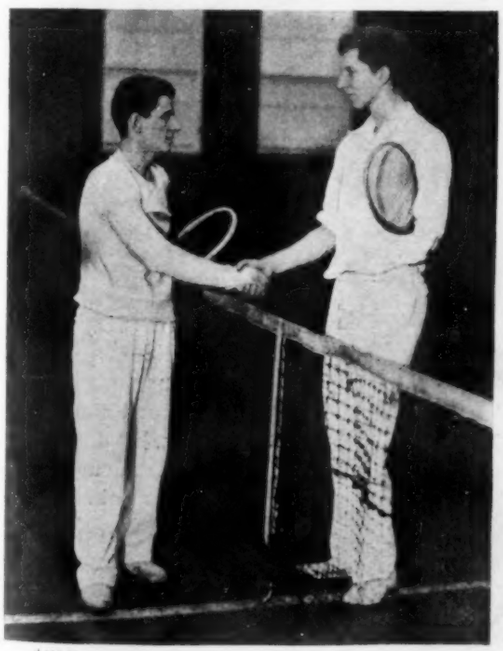
Acme

Alvina Lenke

SULPHUR BATHING

To be buried in sand saturated with hot sulphur spring water is the cure for what ails you in Beppu. It is a queer Japanese custom.

Julius Axelrod, tennis champion, found only one arm no handicap in Middle States Junior finals.



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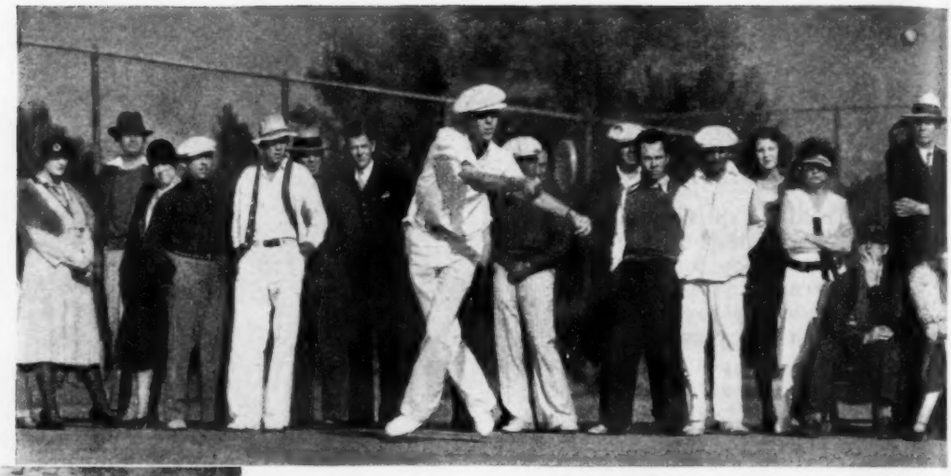
Acme

Prince Gustaf Adolph, oldest son of the crown prince of Sweden, fences for pastime and healthful exercise. He is expert at the sport, as is evidenced above.

ELLSWORTH VINES, national tennis champion, is not even daunted in his play by a crowd at his heels.



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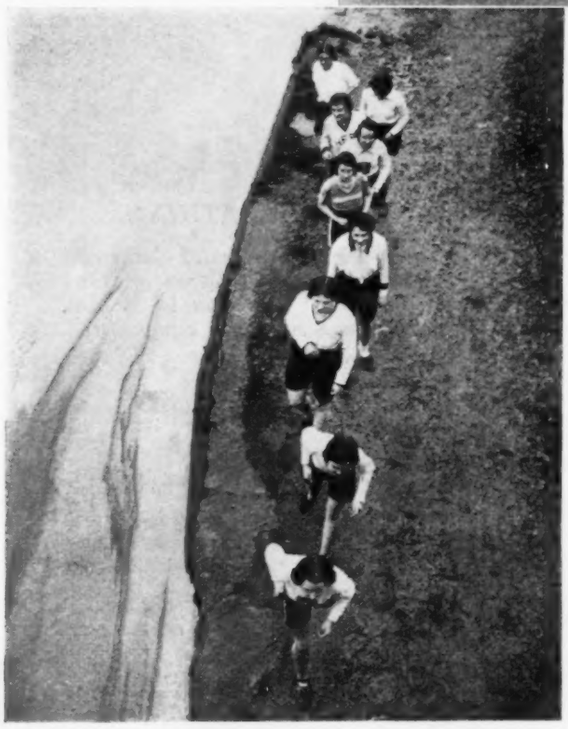


Acme

The camera points down on these English women at Middlesex engaged in a cross country run.

BATHERS OF SUN

Cod liver oil is not needed by these three sun bathers who are fortunate in spending their winter at Miami Beach, Fla.

Acme

Herbert Photos

ABANDONED SONS of criminals are taken aboard the "Garaventa," Italian steamer, and educated. At 20 they join the navy.

AMBULANCE MEN COLLECT hospital funds as curious motorists view fake accident.

Acme

Acme

Navy official demonstrates "lung," used to save submarine sailors.

FIRE DETECTION TOWER

More than 300 fires each year are detected by veteran firemen of Indianapolis who scan the skyline for wisps of smoke.

Herbert Photos

Young "fireman" illustrates thrilling rescue on prize float in baby parade.

Wide World

Trials and Joys of Little Life

By BELLE COATES and GRETCHEN DONOHUE

Want to watch me take my nightly bath, folks? I'll show you some real sport.
I believe in having plenty of water. Nothing stingy about Little Life. Hm-m-m- look at that muscle.
And as for soap- well - you can see for yourself.
Now to lay aside my brush and relax a bit - m - m - m.
Here comes the rinse - warm-cooler, but not too cool because I'm going to bed now
I always get out of the tub to rub down. I knew a little boy once who fell in the tub
Dad says the rub is ninety per cent of the bath
Clean pyjams - and last, but not least, clean tub.
And won't I sleep though! Oh, yes - that cool rinse will come in the morning. G'night, folks.

Christien of the North

Christien and her three brothers were busily making a snow man.

By Helen Foster Anderson

LONG, long ago, before people had found out how to make matches, a little girl named Christien lived with her father and mother and three little brothers in Sweden.

One morning Christien was busily making a huge snow man. Her three brothers were helping her. Their cheeks were as red as apples from the cold wind. The wind blew down from the high, white mountains that rose straight up from the side of the tiny red cottage in which these children lived.

You see, they lived in the far north where the winters are much colder and much longer than our winters are in America. During the coldest and snowiest weather, the children there cannot go to school. There is so much snow that scarcely any one can travel, and the children must go to school in the summer time. When all the snow has melted, summer comes, and it is sunny all day; the sun even shines at night. For it is the land of the midnight sun.

Because there weren't any matches in those days, the only way they had to get a new fire started was to strike two pieces of flint together as hard as they could. Only a small spark of fire was produced. They blew on this spark until the dry chaff nearby caught fire.

Now the people found that it was much easier to go to a neighbor's house to borrow a few glowing coals when their own fires had gone out. Often a housewife lent coals from her own fire to start that of her neighbor's. This very thing once happened to Christien's mother. She was already late starting dinner when she learned the fire was out. She called Christien in from her play at rolling the snow man with her little brothers.

Christien started for the hot coals.

"Yes, mother dear?" Christien called cheerfully. She was usually a good little girl and was always willing to do the things her mother wanted her to do.

"Quick, Christien, run to Auntie Frida's for some live coals. Our fire has gone out, and I am about to cook your dinner."

"I will go, mother," each one of the little brothers cried. The youngest one, who was barely 2½, used the best way he knew to produce results. He sat down beside the snow man and howled persistently, "I go. I go."

Of course, he couldn't go; not even his brothers who were older could go. But their mother relied on the eldest of them to go, her 9 year old Christien. Many times before Christien had gone to the neighbor's for red-hot coals, just as you go to the store for a loaf of bread for your mother.

Christien started out, carrying the iron box by the long handle. She was eager to fetch the bright coals for her mother. They would make a blazing fire in the big fireplace at home before which the children liked to lie at night and watch the red and golden flames leaping up the chimney. It appealed to their imaginations and their curiosity. They could lie for hours before the fire just watching it.

The same fascination seized Christien as she was on her way home with the hot coals safe in the iron box. Even though Auntie Frida had cautioned her to be very careful to keep the coals away from her clothes, she could not resist the temptation to open the box. She wanted to look at the

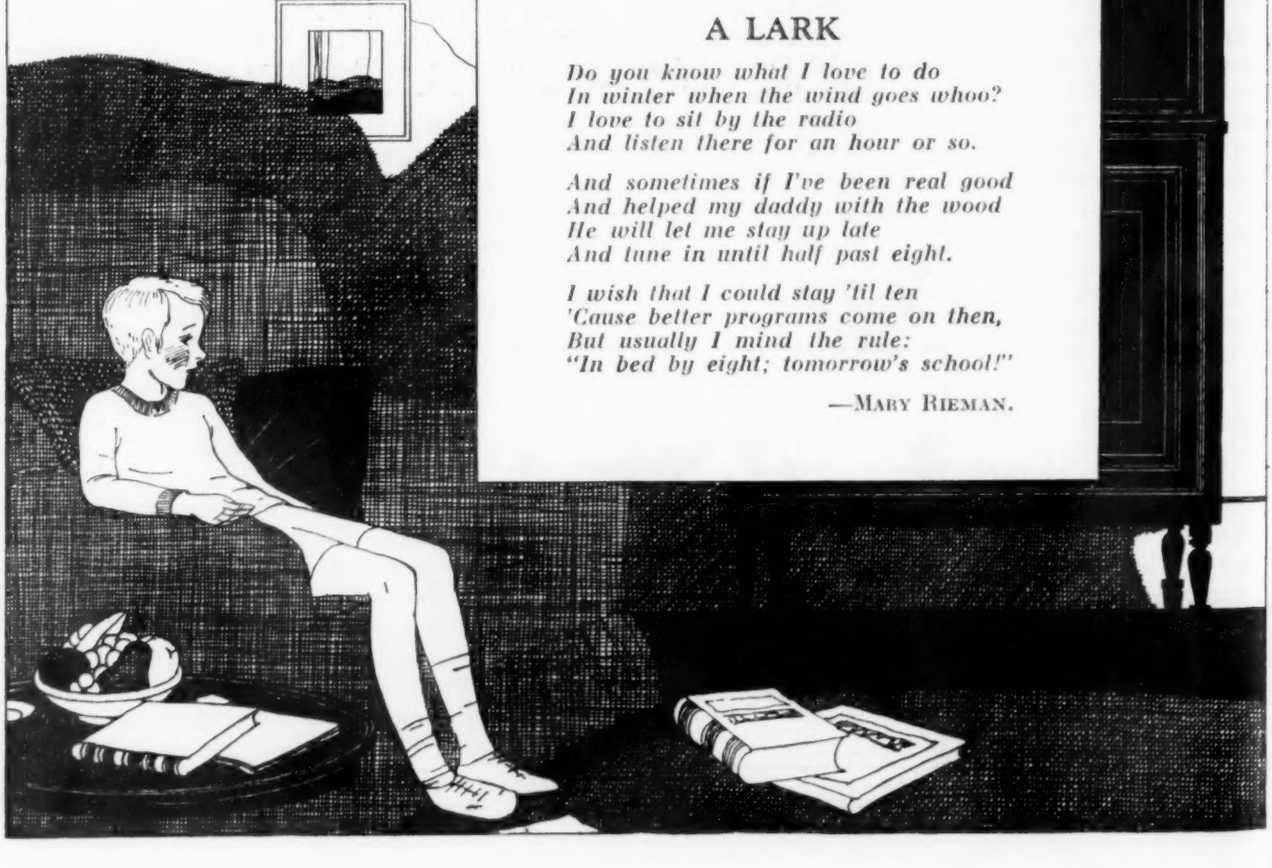
fiery coals closely. She forgot that her mother and father had warned her and her brothers many times not to get too close to fire. "It will burn you badly" they had said.

After watching the coals glow, Christien commenced blowing on them, as she so often had seen her mother do. The flames flew up and reached above the sides of the box. Even though she closed the cover down on the iron box as quickly as she could, the flames persistently leaped from under the cover. The box was so hot that she was unable to fasten the lid tightly.

The children liked to lie at night and watch the red and gold flames leap up.

In her confusion and fright, Christien hastily wrapped the box in her skirt. The box rested closely against her body, as she ran along the road. The flames caught hold of poor little Christien's dress. Before her mother heard her shrieks, her clothing was burned and part of her long yellow braids. Then her mother saved her life by rolling Christien in the cool snow.

Now there are matches in Sweden just like ours, but little children are still told all about Christien so that they will never play with fire or get burned in the sad way that she did.



A LARK

Do you know what I love to do
In winter when the wind goes whoo?
I love to sit by the radio
And listen there for an hour or so.

And sometimes if I've been real good
And helped my daddy with the wood
He will let me stay up late
And tune in until half past eight.

I wish that I could stay 'til ten
'Cause better programs come on then,
But usually I mind the rule:
"In bed by eight; tomorrow's school!"

—MARY RIEMAN.

HEALTH and the SCHOOL

Edited by J. Mace Andress, Ph.D., 67 Clyde Street, Newtonville, Mass.

Teaching Nutrition in a National Crisis

CHILDREN who are in their impressionable years and need to grow mentally and physically are especially subject to the prevailing gloom and lack of nutrition caused by the present economic depression. There are children all over our land in such destitution that they will be weakened and injured for life.

Such a condition is a challenge to our institutions. Schools must bear their share of responsibility in protecting childhood. Now is the time to demonstrate that schools are not cloistered institutions apart from life but are vitally related to our social needs. Our state and national educational associations and our writers on education have been unanimous in putting health forward as the first objective. Often we have done lip service to this standard, but in this crisis it needs to be considered seriously. When stark want invades our homes, children will suffer from lack of clothing, fuel, medical attendance and food. There should be a stiffening up of the health work all along the line, but particularly in the field of nutrition, for today we are becoming more and more appreciative of the importance of nourishing foods for mental and physical welfare. There are certain things that the school can do and those things should not be neglected.

Since many pupils buy lunches at the school cafeteria it is possible to provide nutritious food and to teach them to make the right choices through regular classroom work and supervision of the lunch room. It will also be possible to suggest what would make suitable lunches for those who carry their lunches. Even in the lower grades children have their pennies to spend and they may be influenced to spend their money for fruit like oranges and bananas rather than for cheap candies. Much of this instruction may be welcomed in the home. In food classes particularly, the discussion of food values and the preparation of recipes and menus may directly influence the home.

Serving high grade food at an average cost of 22 cents a meal this model cafeteria feeds 5,000 high school students of New York City.

The need for relief is so pressing that in many cases the vital question is to what extent retrenchment can be made with the least danger of inflicting a permanent injury. It is not a question of what ought to be fed children under ideal conditions but how the money available may be spent in the best way.

The present crisis is being realized fortunately by such able students of nutrition as Dr. Henry C. Sherman of Columbia University, who contributed an article recently on "Emergency Nutrition" for the bulletin published by the American Child Health Association.

Dr. Sherman thinks that for normal times the suggestion by Miss Lucy H. Gillett on the division of food money is helpful. She says "Divide the food money into fifths: one fifth, more or less, for vegetables and fruits; one fifth or more for milk and cheese; one fifth or less for meats, fish and eggs; one fifth or more for bread and cereals; one fifth or less for fats, sugar and other groceries."

But if forced below reasonable standards to bare essentials, such a program may need to be readjusted. It would be well then to concentrate attention on these three essential groups of foods: (1) milk and its products, (2) fruit and vegetables, (3) bread and other cheap sources of calories.

If dire destitution makes it necessary to make sacrifices among the three bare essentials of bread, milk and some fruit or vegetable in its cheapest form, what then? Dr. Sherman's answer is worth quoting: "Shall obvious hunger and a starved appearance lead to the crowding out of milk by bread because a penny spent for bread goes farther to still the pangs of hunger? To go far in this direction is to incur the

even greater tragedy of the lifelong injuries which result from the 'hidden hunger' of the mineral and vitamin deficiencies. 'Milk builds bone and muscle better than any other food.' And more than this, milk is both the cheapest and the surest protection from the nutritional deficiencies which open the way to diseases and lifelong injuries to health, happiness and working efficiency.

"The dietary should be built around bread and milk. The lower the level of expenditure, the more one must forego other foods and concentrate effort on providing these two, supplemented by some inexpensive fruit or vegetable."

A final observation of Dr. Sherman's should not be overlooked. While reasonable standards may not be attainable by following the foregoing suggestions, children may be brought through this crisis without lifelong injuries so that even if bodily weight becomes subnormal, there will "still be a basis of sound bone and lean tissue to permit of complete nutritional rehabilitation with the coming of better days."

TEACHING HEALTH

(In this column will be published each month concrete examples of good health teaching. Teachers are invited to send in contributions not exceeding 600 words and preferably less to the editor of this department. Illustrations of the actual work of children will be welcomed. Contributions accepted will be paid for but no manuscripts will be returned.)

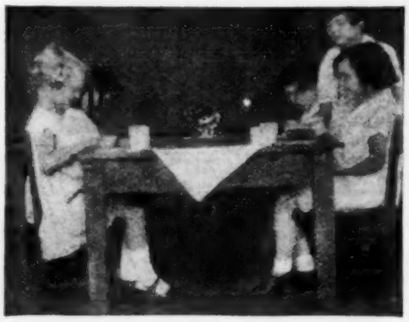
A PROPER BREAKFAST

A BREAKFAST at school! That was a new idea to the first graders of Mayfair school, East Cleveland. Now that they had completely built and furnished a four room apartment as a unit of work and had planned and participated in a tea for the mothers, the builders and the hosts and hostesses decided to dine themselves. But what was a correct breakfast?

The teacher and children agreed that too many times this most important meal is hurried and insufficient for growing children. They therefore proceeded to plan a breakfast.

First, hot cereals were discussed and cream of wheat was chosen by popular vote. Orange juice was acclaimed to be necessary. The children were thus introduced to vitamin C. Milk for growing children needed no emphasis. Whole wheat bread and butter with jelly were voted for, though it was deemed impractical to toast the bread for forty hungry children.

The menu then consisted of the juice of two oranges per child, a bowl of cream of wheat with whole milk, whole wheat bread, butter and jelly, and a glass of milk. This was cooked and served by the little girls. The small cost was defrayed by each child bringing a few pennies.



Many lessons were gained from the experience besides the health lesson. The trip to the grocery to buy the articles needed, the handling of the money, the correct setting of the tables and lessons in courtesy at the table were considered to be of great value. On the whole the "correct breakfast" was indeed worth while.

BERTHA L. SWOPE,
Supervisor of Health and Physical Education,
East Cleveland, Ohio.

HEALTH IN THE RURAL SCHOOLS

WHILE schools of towns and cities have long enjoyed the advantages of health training, the rural communities in most instances have had to get along without organized health work.

Two years ago, however, Larimer County, Colorado, began systematic health work in the rural schools by employing a county school nurse whose duty it is to look after the welfare of the rural children.

The school nurse outlines the year's program to the teachers at the general meeting at the beginning of the school year and gains their added interest and cooperation by stressing the fact that her work is to lead the children toward clean, healthful and happy living.

When she visits the larger consolidated, centralized village schools she first investigates conditions in school and community and then asks the principal to call a meeting of the teachers to discuss conditions and map out a program suited to the particular school.

Together they plan how best to do the work and what effort should be made in the community outside of the school to get good results. Then with teachers and nurse cooperating the work is at once started in the school, and the program is speedily under way toward effective health results.

In the smaller schools the nurse gives talks on neatness, posture and cleanliness. The children work out posters to illustrate health subjects. Colored magazine advertisements are used, from which the children make their own combinations and for which they write appropriate slogans. The children are enthusiastic about this work.

They also make "moving pictures" by pasting pictures that tell a health story on rollers and reeling them off for the school audience. An indigestible food or harmful drink is always the villian.

Booklets are also made representing good homes, pleasant rooms, sanitary appliances and attractive tables that emphasize the pleasant harmonious home environment. For in connection with health work, right attitudes must be stressed. Each child washes his hands before eating his lunch not only because it is sanitary but because others find it more pleasant to lunch with him if his hands are clean.

Cleanliness of buildings, proper heating, lighting and ventilation are emphasized and the nurse helps put them into effect. The work is clearly outlined for each teacher and the nurse keeps in touch with all schools by correspondence and three yearly visits. Lists of proper lunch foods are supplied on request.

Larimer County has established the first dental clinic for rural school children in the state and its remarkable success is proving to be of widespread interest. The town schools are also given the privilege of treatment at this clinic.

All dentists in the town participate in the clinic work. When a school is ready to take the children to the clinic, the nurse is notified and she in turn notifies the proper dentist. The nurse is always in attendance at these clinics. Children in the larger schools are brought to town in the school busses while in the smaller districts some board member usually offers his services to transport them.

While the work is not free it is done at a reasonable price, and if the parents are unable to pay for it the district board does so or the county's share of the proceeds of the tuberculosis seal sales is used in part for this work. The county is allowed a certain percentage of the seal sale funds for general health work while the state uses its share for the fight against tuberculosis alone.

Health work, like all other kinds of educational effort, is broadening to include in its scope not health alone but happiness, material advancement and citizenship as well.

ALICE COOK FULLER,
Fort Collins, Colo.

PRACTICAL HEALTH IN ACTION

NO AMOUNT of preaching on health will be of value, if the same children who nod in affirmation of your words come to school with dirty nails and without handkerchiefs. I keep a box of toothpicks for dirty nails and a supply of paper handkerchiefs for those who forget a handkerchief or bring a soiled one. These supplies are for extreme cases as children are encouraged to clean nails at home and bring handkerchiefs from home.

Drinking cups wrapped in glazed paper are kept in a desk away from dust and flies. Morning inspection is taken each day and a health report is sent home each month.

After the importance of proper humidity, ventilation and temperature have been taught, the children take turns in being responsible for the comfort and healthful condition of the schoolroom.

Early in the fall we begin an anti-cold campaign. First we review what we know about the causes and prevention of colds. Then we try to get new information. Each child pledges himself to do all he can to prevent having or spreading colds. If a child gets a cold and comes to school, we put him off by himself in a corner of the room to which we have given the name "Quarantine Station."

Each absence that is due to sickness or any case of sickness in the home is discussed as to the probable cause, possible prevention and proper treatment. The children quickly see that much of the sickness might be prevented and they become crusaders for prevention.

We have a simple first aid kit. Many are the lessons on proper bandaging, prevention of infection and care of burns that come from slight accidents in school.

Handwashing before lunch is done quickly with the aid of two pupils and the equipment of a dipper, a water bucket, a waste water bucket, a bottle of liquid soap and a supply of crape paper napkins, for those who forget to bring a towel from home.

These activities are far superior to formal health instruction.

MARGUERITE DIGBY,
Greer, S. C.

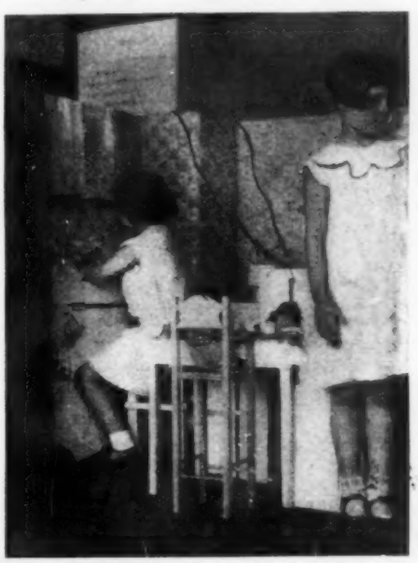
SCHOOL WORK HINDERED BY NOISES

A survey of noise conditions studied through 846 public schools showed that in 30 per cent of classrooms noise made the conducting of classes almost useless. This survey conducted under the health commissioner of New York City roughly estimated that the noise was costing the city $43,901,400.

NEW HEALTH BOOKS AND TEACHERS' MATERIALS

REFERENCE was made in these columns to an excellent pamphlet entitled "Teacher's Inventory of Health Assets" published by the National Tuberculosis Association. It was designed to bring to the teacher fundamental problems in health teaching and to stimulate her to do something about them. The demands for this pamphlet and correspondence from the field led to the preparation of another pamphlet "Pointers on Health Assets,"[1] which gives the teacher further suggestions. Among the twenty-four questions presented for the teacher's consideration are the following: Is my schoolroom a healthy, happy place? How many of my pupils look like healthy, happy children? How many give evidence of good hearing? How many bring an adequate, nourishing lunch to school?

Teachers who wish to accomplish definite things in health education and would like to measure their results will welcome this new publication because it has value.



Home-making gets an early start in this school.

ANY school that wishes to be thought of as progressive today shows a keen interest in safety education. The need of this is borne in upon us by Idabelle Stevenson in her practical book "Safety Education."[2] According to Miss Stevenson 98,258 persons in the United States lost their lives by accident in 1929. In a statistical survey automobile accidents loom large. Thus over a period of sixteen years deaths from automobiles increased from 4,227 to 31,215. Since according to conservative estimates there are thirty-five nonfatal accidents to every fatal accident there were about 1,000,000 persons injured by automobiles in our country in 1929. The economic loss from such accidents was in the neighborhood of $8,000,000.

Frightful as these figures may be there is reason for encouragement. There has been a decline in certain kinds of accidents. The record for children has been more favorable than for adults. From 1922 to 1928 the accidental deaths of adults increased 32 per cent. During the same period the accidental deaths of children increased only one sixth of 1 per cent. This advantage, Miss Stevenson believes, is due largely to the educational safety activities of our schools.

The greater part of the book deals with practical methods of health education that have been tried out successfully in our schools. This volume should be found in every teacher's library.

IT IS evident that they are active in health education in Michigan. One is impressed by this as he peruses "By the Way,"[3] a bright little sheet of seven pages. It bears evidence of the real progress that some of the teachers are making in that state under the able leadership of Elma Rood and others. It is inspiring to read about the achievements made by teachers who are handicapped in many ways, such as teachers in rural communities.

The school in one community is reported to have made many improvements last year. The school building was repainted, old toilets were disposed of, new chemical toilets were installed, a stride swing and turning bars have been put on the playground to stimulate an interest in outdoor recreation, and the handwashing facilities and drinking water have now been improved. The teachers of these grades in reporting on their work say: "We are endeavoring to prepare in the present generation citizens who possess not only knowledge and information along many lines but also equipment along health lines: a sound body and health habits that will enable every product of our school to keep his or her human dynamo up to par so that each one may live a better and fuller life, and contribute to the joy of others by making this a happier, healthier and more efficient world."

1. Pp. 15. New York: National Tuberculosis Association, 1931.
2. By Stevenson, Idabelle. Pp. 156. New York: A. S. Barnes & Co., 1931
3. By the Health Education Division of the Children's Fund of Michigan, 660 Frederick Street, Detroit.

HEALTH habits are so fundamental in any health education program that any book that takes this point of view should immediately command the attention of the teacher. In "Here's Health,"[4] however, one feels that the author who signs himself as Dr. but not M.D. is riding a hobby to death. He doubts the truth of the theory that germs are the cause of disease. Lowered vitality is the condition that invites an attack of germs, he believes, and this lowered vitality is due to the bad habits of the individual. Although there is a good deal of truth in this theory it breaks down when applied as a universal principle. In his discussion "Dr." Brill refers to few facts or investigations and seems to be concerned mostly with advertising his own theory. His discussion of colds, for example, indicates that he is either unaware of the recent investigations in that field or prefers to disregard them. His contention that the body should be kept at the highest point of efficiency and that health habits should be formed is one that health experts everywhere accept, but his book contains little or nothing for the teacher unless she is a discriminating reader.

THE ability to speak in a normal way is one of the essentials of successful living and any individual who lacks this ability finds it difficult to adjust himself to the world around him. Since there are many thousands of children who stutter and have other speech difficulties, research in the field of speech pathology should be followed with care by educators, especially by those who specialize in teaching speech. Dr. Travis, director of the speech clinic at the University of Iowa, contributes to this field through his interesting volume, "Speech Pathology."[5] It is rather a heavy book but has a good glossary. Even with this help it is rather too difficult except for the well trained reader. Let us hope that Dr. Travis or some of his associates will write a briefer and more popular book for the ordinary reader and teacher.

THE opening discussion in this department of HYGEIA refers to the importance of teaching nutrition in this national crisis. Teachers need to have at hand the latest and best reference books because there is so much change in the theory of nutrition as a result of numerous experiments and also because there is so much that is either worthless or misleading in this field. Dr. Bogert in "Nutrition and Physical Fitness"[6] presents a valuable volume for the teacher. It is well organized, sound, interesting and practical. It should be recommended for the shelves of both your school and community library.

THE science of nutrition is making such rapid strides these days that high school teachers of dietetics will welcome the revision of the dependable text by Willard and Gillette. It brings the student and teacher face to face with practical problems such as the feeding of children and adults and gives them guidance in the management of home affairs. The book is modern and up to date in presenting the most recent theories on foods. There is a limited amount of space devoted to the anatomy and physiology of digestion. Problems for the student are scattered through the book "Dietetics for High Schools,"[7] which they will enjoy solving.

IT SEEMS a far cry from the kindergarten child to a mature American citizenship but training in citizenship must begin some place, and fortunately Froebel and the leaders of the kindergarten have established a wholesome tradition for socialization at the beginning of the child's life. The authors of "Kindergarten-Primary Activities Based on Community Life"[8] indicate clearly how certain activities based on community life may be carried on in the kindergarten. "Citizenship," they say, "cannot be taught merely by a memorization process. There must be ample opportunity for practice with satisfaction in situations that call forth the desired responses." These opportunities for practice are made possible in part by units of activity in the kindergarten and primary grades. Such units center around activities that have to do with the park, airplane, home, garden, post-office and Indian life.

THE aims of this volume,[9] "Conduct Problems for Junior High Grades," are similar to "What Would You Have Done?" by Vernon Jones. Instead of biographical incidents from the lives of men and women there are statements of problems taken from real life, problems that are stated with brevity. For example, there was Clara who was 16. Although she did well in school she was always alone. When the teacher talked with her about it she admitted reluctantly that the children made fun of her because she was so tall and too old for the grade. Her classmates had failed to realize that because of illness and through no fault of her own she could not attend school. Clara hates school but thinks that when she reaches the junior high school where the children are taller she may like it better. After the statement of such a problem there are a number of questions for the pupil to answer. The answers are supposed to be copied in a work book. Classes are supposed to discuss these different problems in their home room groups.

Although the word mental hygiene does not appear in this excellent text, it is really intended to help boys and girls to become more conscious of behavior problems and to stimulate them to think about ways in which the game of life may be played fairly. It seems to the reviewer that the careful consideration and discussion of the fifty problems in this book by high school students would be much more important than acquiring facts in history or skill in algebra, if a choice really had to be made.

AN illustration of the progress made in preparing textbooks that are interesting for children is found in "Ourselves and Our City."[10] This is one of Carpenter's "Journey Club Travels," a civic reader designed for use in the lower grades of the elementary schools. The children in this story travel around in their neighborhood and city to find out what their city is doing for them and what they can do for their city. There are chapters on pure food, milk, water and protection from disease. The book is well illustrated.

4. By Brill, Morris M. Pp. 120. Price, $1.50. New York: The Dial Press, 1931.
5. By Travis, Edward Lee. Pp. 331. Price, $4. New York: D. Appleton & Co., 1931.
6. By Bogert, J. Jean. Pp. 554. Philadelphia: W. B. Saunders Company, 1931.
7. By Willard and Gillette. Pp. 290. The Macmillan Company, New York, 1930.
8. By Clouser, Lucy Weller; and Millikan, Chloe Ethel. Pp. 299. New York: The Macmillan Company, 1929.
9. By Fishback, Elvin Holt; and Kirkpatrick, Edwin A. Pp. 60. D. C. Heath and Company, Boston, 1930.
10. By Frances Carpenter. Pp. 296. American Book Company, New York.

New Books on Health

ESSENTIALS OF DIETETICS

By Pope, A. E., and Geraghty, E. M. Cloth. Price, $3. Pp. 727. New York: Putnam, 1931.

THIS well established book has been revised by Miss E. M. Geraghty, author of "Dietary Suggestions" published by the American Medical Association. It is one of the most practical books on dietetics available for the general reader and particularly for the nurse. It provides chapters giving full information concerning the constituents of foods, methods of administration, methods of preparation, menus and recipes and diets during pregnancy. A section on food poisoning and a list of diets for various diseases are also included. Especially adequate are the appendixes which provide tables of approximate composition of common foods, average servings of common foods, standard weights and food values, recipes and test meals. Finally, there are several excellent indexes to enable ready reference.

MORRIS FISHBEIN, M.D.

HOW'S YOUR BLOOD PRESSURE?

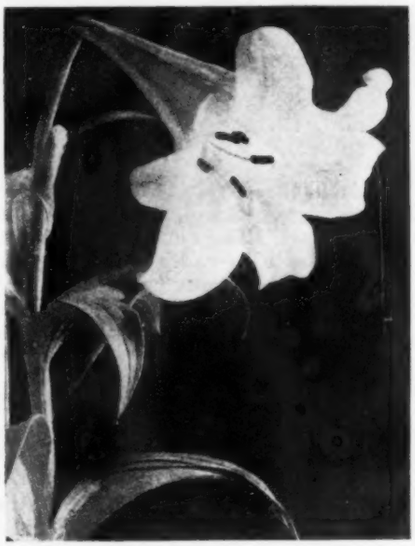
By Clarence I. Andrews, M.D. Cloth. Price, $2.50. Pp. 225. New York: The Macmillan Company, 1931.

THIS book is written particularly for those sufferers from high blood pressure who, because of misinformation and inability to separate cause from effect, live in constant fear of some calamity. The volume unfortunately discusses the subject in such great detail and with so many technical features that it is likely to miss its goal even if it is most informative. After all, the reader will not study the book with a medical background, and he is likely, therefore, to read into the statements something beyond what the author intended. The author's explanation of the cause of high blood pressure accepts heredity, infections and bad habits as primary factors. These, of course, are explanations that do not quite explain. For the very reason that high blood pressure is not to be explained on any more certain basis, the book constitutes a valuable work of advice on general hygiene. To this extent it will no doubt be helpful to those who read it. M. F.

ELEMENTARY ANATOMY AND PHYSIOLOGY

By Mulliner, Mary Rees, M.D. Price, $4.75. Pp. 448. Philadelphia: Lea & Febiger, 1931.

PREVIOUS editions of this book have met with a most favorable reception. The text is planned primarily for students in hygiene and physical education. Therefore, special emphasis is placed on physiology of the muscular, nervous, circulatory and digestive systems. The author has depended for reference largely on the latest edition of Gray's Anatomy and Starling's Physiology. Dr. Mary Mulliner is introduced by Prof. R. Tait McKenzie, as a physician with some seventeen



years of practice, a lecturer on mechanotherapy and a teacher of anatomy, particularly in relationship to physical education.

M. F.

NOTES ON CHILDREN'S NURSING

By Erxleben, Marguerite C. Leather. Price, $2. Pp. 242. Philadelphia: F. A. Davis Company, 1931.

THIS is one of the most practical volumes that has been made available not only for the nurse in the hospital but also for the mother who wants to learn fundamental nursing procedures for use in the home. The book is full of practical hints on bathing, hygiene, diet, and various special nursing technics. Pages are provided for extra notes and there is a good index. M. F.

NURSERY EDUCATION

Report of the Committee on the Infant and Preschool Child, John E. Anderson, Ph.D., Chairman. The White House Conference on Child Health and Protection. Cloth. Price, $2. Pp. 187, with illustrations. New York: The Century Company, 1931.

THIS volume is of health interest since it constitutes a part of the proceedings of the White House Conference. The book is concerned not only with organized care for young children in various types of institutions but it discusses particularly as a part of such organized care the requirements for admission from the point of view of health and the medical facilities available in such institutions. The report indicates that relief institutions definitely lead in medical care and facilities; nursery schools are not far behind, but the provisions for medical care in kindergartens lag considerably behind those in the other types of institutions that have been mentioned. The book contains as an appendix a geographical list of institutions and in association a good bibliography and an index.

M. F.

HEALTH PROTECTION FOR THE PRESCHOOL CHILD

A Publication of The White House Conference. Price, $2.50. Pp. 275. New York: The Century Company, 1931.

THE volumes of information that continue to come from the White House Conference on Child Health and Protection are of immense value to physicians and social workers. The preschool child may be said to constitute the third generation from the present, the adolescent child being the next generation. In order to determine the extent to which proper attention is being given to the preschool child, arrangements were made for a house-to-house survey which reached 146,000 children in three-fourths of all of the cities of more than 50,000 population, and 37,000 children living in rural areas in forty-two states. Here then is a report in four parts, providing the general status of preventive measures over the country, the use of preventive medical and dental services, statistical tables yielding a vast amount of information and a description of the administrative features of the survey M. F.

QUESTIONS and ANSWERS

Health of School Children

To the Editor:—For the promotion of health we are conducting a survey in the interest of the health of the child of junior high school age. We solicit from you information or available sources of information concerning the medical status of the health of the child of this age, with a type examination usually given. We should appreciate any information that you have available, either free or for purchase, concerning the defects, disorders and diseases that impede the school progress of these children.

R. F. G., Massachusetts.

Answer.—There are no adequate studies of the health status of high school pupils with regard to illness and physical defects that can compare with those available for elementary pupils. The inquirer will be interested in the studies of Dr. Edna W. Bailey, associate professor of education at the University of California. She submits a program for high schools in a pamphlet entitled "Health in High Schools," published by the National Tuberculosis Association.

A few years ago the American Child Health Association made an investigation of health trends in secondary education in which the health programs of fifty-three schools were analyzed. The results are contained in a pamphlet entitled "Health Trends in Secondary Education."

In Chicago the Elizabeth McCormick Memorial Fund, in cooperation with the board of education, is carrying on an extensive program in health education in one of the junior high schools. A course of study in health education for Chicago's elementary schools was developed out of a similar cooperative program carried on by these two organizations for the last five years. It is hoped that the present demonstration will lead to a course of study for junior high schools. It is our understanding that a number of cities, among them Detroit, Cleveland, Philadelphia and Newark, are also working seriously on the problem of health education and a health program in secondary schools.

In Chicago there have been extensive medical examinations of children of junior high school age, but the results have not been published. The University of Chicago High School has a large number of records on children of this age. The same is true of the Evanston public schools. No doubt data could be obtained from these schools.

"Catarrhal Condition"

To the Editor:—Is there a cure or help for a nasal infection or catarrhal condition? The gums become sore from the constant mucous discharge, and at times I am hoarse from the drainage. I sneeze a lot. My eyes have become weakened, and I am at present wearing glasses. I also suffer with rheumatism and neuritis. X-ray examination shows that my lungs, teeth and sinuses are in a normal condition. If this catarrhal condition is allowed to continue, will it infect the sinus? Is there something to keep the mucus from flowing so freely?

R. F. J., Nebraska.

Answer.—There is no one disease that is typified by the symptoms described. The conditions that are most liable to cause such a combination of symptoms are atrophic rhinitis and an ethmoid sinus infection; the latter condition is frequently not shown by x-ray examination of the sinus.

An ethmoid sinus infection would cause sneezing and would be a focus of infection tending to produce rheumatism and neuritis. This condition requires a nasal operation for its cure. The disturbance caused by the presence of such an abnormal excess of mucus is that of atrophic rhinitis. There is no known cure for this condition, but the disturbance may be alleviated by drawing through the nose a solution of table salt and baking soda dissolved in warm water, in the proportion of a half teaspoonful of each in an ordinary glass full of water. For an accurate diagnosis of this condition, the patient should see a reputable nose and throat man.

If you have a question relating to health, write to "Questions and Answers," HYGEIA, enclosing a two-cent stamp. Questions are submitted to recognized authorities in the several branches of medicine. Diagnoses in individual cases are not attempted nor is treatment prescribed. Anonymous letters are ignored.

Oxygen

To the Editor:—I should like to know if there would in time be harmful results from a person breathing practically pure oxygen in rather large quantities. I am engaged in some energy metabolism studies during various activities and am using an apparatus by which the subject breathes almost pure oxygen (mixed with some air) for periods of from ten to fifteen minutes. There are often five or six of these periods in half a day, this type of work being carried out three mornings a week. In your opinion, would there be any harmful physiologic results from breathing oxygen?

V. W. S., Washington.

Answer.—In our opinion no danger whatever attaches to the breathing of oxygen in the manner described. A recognized authority in physiologic chemistry has performed a series of experiments on himself in which much the same procedure was followed, without any ill effect. Oxygen, except under pressure, is not harmful.

Leukoderma

To the Editor:—Has the medical profession discovered a cause or a cure for leukoderma? Is loss of pigment liable to continue after 35 years of age or to begin again after it has once stopped?

S. M. S., Massachusetts.

Answer.—The cause of leukoderma (abnormal white patches of skin) is not known. The course of the disorder is irregular, and the loss of pigment may continue indefinitely. As a rule, however, after the condition has developed to a variable extent it becomes stationary, and further loss of pigmentation is not liable to occur. A familial tendency is noted in some instances, but the disease is not regarded as generally hereditary. No satisfactory treatment is available, although recently the disorder has been reported as cured by the injection of gold salts, and attempts have been made to restore pigmentation by application of a solution of oil of bergamot in alcohol, followed by ultraviolet rays; experience with these methods is as yet too limited to permit a statement as to their proper value.

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When he scratches his knee, or even stubs his toe, there's danger of infection setting in. He's worth protecting!—teach him to use Hexylresorcinol Solution S. T. 37 regularly as a mouth wash and gargle. Pour it immediately into open wounds.

Buy a bottle today. It is prepared by a pharmaceutical house of recognized standing with the medical profession.

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HEXYLRESORCINOL SOLUTION S.T.37

Toes Straight Ahead

LEFT foot! Right foot! Up hill and down dale—over hard pavements and country roads as well as indoors, they have carried you millions of steps. If you want them to carry you several more millions of steps in comfort, a little time will be well spent considering that marvelous bit of anatomic engineering, your own foot.

And those healthy little feet of your children—keep them strong as they are now by giving your boys and girls the right kind of shoes and by teaching them to walk softly like an Indian—with toes straight ahead.

Unless all of the twenty-six bones in the foot are kept in their proper places, the long arch which extends from heel to great toe, or the short arch across the ball of the foot, may weaken, sag or fall. Pain in the foot, leg or other parts of the body will follow pressure of displaced bones against sensitive nerves.

Stubborn cases of headache, backache, continued fatigue, poor circulation, indigestion, unruly nerves, spinal disorders, neuritis, rheumatism or pain often mistaken for kidney trouble may have their origin in the feet. Kept strong and well, neither tilted out of proper position nor cramped by ill-fitting shoes, your foot is a sturdy support. But even if it has been badly used, a foot specialist may, by prescribing foot exercises or scientifically constructed shoes, restore it to a full measure of usefulness.

Misuse (toes pointed out)
Disuse (lack of exercise)
Abuse (wearing improperly fitted shoes)—
these cause not only temporary foot miseries but also fallen arches and other serious injuries.

Do you stand and put your full weight first on one foot, then on the other when buying new shoes? Your foot is longer when you are standing than when you are sitting.

Shoes should have a straight inner edge and should be large enough to permit the toes to lie flat. And most important—the sole of the shoe, under the ball of your foot, should not round down in the center or bend up at the sides. If it does, the short arch may be forced down and flattened by your weight. Feel the inside of the shoe to make sure that the sole is not lower in the middle than at the sides.

When a foot is unable to carry its load uncomplainingly, knees, hips and spine suffer the consequences. A straight body, having good posture, is rarely found above weakened or distorted feet.

Send for the booklet "Standing Up to Life" which tells how to overcome many foot troubles by means of intelligent corrective foot exercises. Address Booklet Dept. 3-G-32.

METROPOLITAN LIFE INSURANCE COMPANY
FREDERICK H. ECKER, PRESIDENT ~ ONE MADISON AVENUE, NEW YORK, N.Y.

Ultraviolet Radiation for Falling Hair

To the Editor:—Can you advise me whether the ultraviolet ray treatments for the scalp are of any benefit in retarding the falling of the hair? I am taking weekly doses of from fifteen to twenty minutes' duration, which are given by the nurse at the office of a physician. These treatments have a tendency to dry the hair.

F. S. K., New York.

Answer.—Most dermatologists believe that the use of ultraviolet rays is of service in the treatment of baldness, although good results are to be expected only in cases in which atrophy of the hair follicles has not progressed to a hopeless stage. The exposure should be given frequently and in a dosage sufficient to produce an intense erythema (redness). It is questionable whether the results obtained by the use of radiation are greater than those secured following the use of other measures that produce hyperemia (an increase in the blood supply to the affected part), but with radiation this end is obtained in a safe and convincing manner.

Bridgework

To the Editor:—I am 23 years old and am contemplating having two false teeth set in, one on each upper side, replacing my eyeteeth. I do not know which is the better, bridgework or the clamp style tooth. If bridgework is used, can it be hooked on to a tooth without a nerve, a dead tooth? If I should have novocaine administered in the adjoining teeth, will it deaden the teeth permanently or just for a time? My dentist does not recommend one procedure above the other, and I have no one to consult, so I am calling on you.

M. S., Ohio.

Answer.—Bridgework usually needs to be supported at each end even though it is for the replacement of one tooth. It does not matter whether the teeth acting as supports have live or dead nerves in them. The fixed type of bridge is usually more satisfactory than the "clamp" style when only one tooth is missing.

In this case, if bridgework is used it would require two separate bridges. No doubt two bridges would cost more than a "clamp" type or "removable piece" but might prove good economy in the end, as there is less probability of future trouble and replacements.

Procaine hydrochloride (novocaine) acts to deaden tissues temporarily only and does not cause the pulps in teeth to die.

Manganese

To the Editor:—Information or comment on Dr. E. V. McCollum's recent investigation of manganese as an essential to all life is desired. Is it true that a temporary lack of manganese in the diet would have such an effect on the suprarenal glands as to cause a convulsive death?

M. S. D., Ohio.

Answer.—Manganese, like potassium, magnesium and some other metals, is essential to all plant life. All ordinary foodstuffs contain manganese in small amounts, and if it is essential in animal nutrition enough is found in any ordinary diet. Therefore Orent and McCollum (J. Biol. Chem. **92**:651, 1931), in order to study its effect, had to prepare with some difficulty a diet free from manganese. When young rats were fed on such a diet, they grew to maturity in an apparently normal manner and produced the normal number of young. However, the females in such cases failed in fifty-eight out of fifty-nine cases to suckle their young, and appeared indifferent to them. Rats on the same diet with a little manganese added did suckle their young and would foster the young manganese-free rats.

Male rats raised on a manganese-free diet showed degeneration of the testicles, and if the diet was continued, only vestiges remained and complete sterility developed.

Orent and McCollum suggest that manganese may in some manner be concerned with the functioning of other glands of internal secretion such as the anterior lobe of the hypophysis. They do not comment on the effect on the suprarenal glands and we do not have any evidence that manganese would change the suprarenals in such a way as to cause a convulsive death.

Change in Color of the Eye

To the Editor:—When I was 5 years old, my right eye was hit with a missile. A cataract formed, which was removed, leaving the eye completely blind. At the age of 16, the color of this eye turned from blue to brown. Can anything be done about it?

A. K., New York.

Answer.—Nothing can be done to restore the natural color of the iris in such a case, but the change in color suggests a degeneration of the eye that may make it a menace to the other eye or even to the general health. Consultation with an ophthalmologist is desirable.

Every child has the right to be well born.—*John Ruskin.*

If you'll ask the Doctor

why he so strongly urges Wheatena

for children . . . . he'll tell you that it supplies those precious food elements that build sturdy bodies and are so necessary to health.

Doctors—for more than 50 years—have recognized Wheatena as being one of the most nourishing and easily digested of all cereals. And millions of children and adults love it for its toasty, nut-like flavor. Wheatena is so quick-cooking that you can have it ready for the milk or cream in 2 minutes—and it's so inexpensive that you can serve it for less than a penny a dish.

4 delicious servings FREE

We want you to taste the delicious, nut-like flavor of this wonderful wheat cereal—Wheatena. Please mail this coupon and we'll send you enough Wheatena for four generous servings.

Name.....

Address.....H-3-32

The Wheatena Corporation, Wheatenaville, Rahway, N. J.

Listen to "RAISING JUNIOR"—NBC Blue Network—every evening except Wednesday—6 o'clock (E.S.T.). NBC Gold Network—every evening except Monday—7 o'clock (P.T.).

CENTURY-OLD BREEDING THEORY IS NOT SCIENTIFIC

Telegony is the influence exercised on the mother by her unborn child. Many farmers still believe that if a pure bred animal is crossed with a male of another breed the resulting mongrel progeny will so influence the mother that none of her future offspring can ever be pure bred no matter how strictly her future mates conform to her own breed.

The origin of this belief is found in an observation reported by Lord Morton to the Royal Society in the year 1820. He told the society that a mare that had been crossed with a quagga, a species of zebra, and had afterward been mated to a pure bred Arab had with the first mate foaled a hybrid and with the second a striped foal.

Professor Ewart in recent years has conducted experiments to test the reliability of this century-old report. The professor crossed mares first with zebra stallions and later with ordinary horse stallions. The first crossing of course gave striped hybrids. The second crossing gave foals in which, it is true, faint stripes were sometimes visible. But these foals were no more striped than are the progeny of mares who have never seen a zebra. The truth is that faint stripes may often be noticed on any foals. They are an indication that the horse is descended originally from a striped ancestor. The theory that the fetus in the uterus exerts an influence on the mother that will affect subsequent offspring is thus deprived of the only scientific support that it ever had.

NUTRITION IS MEASURED IN "IRREDUCIBLE AMOUNTS"

Too much cannot be said about the nutritional needs of small children during this crisis of depression. An Emergency Food Relief and Child Health pamphlet from Washington, D. C., lists the following "irreducible amounts" of the protective foods which may be used in a crisis but which are not adequate for over a long period of time. No diet should ever fall below the quantities suggested below:

Milk must be had daily in quantities of at least one pint for every child and for every pregnant or nursing mother; cod liver oil must be given in portions of at least two teaspoonfuls daily for every child under 2 and those undernourished; at least one vegetable daily and preferably two for all the family is indispensable.

MOTHER
protect your baby
from germs of infection

Vanta
Sterilized
GARMENTS FOR BABIES

FOR your sake, Mother, and Baby's, clothe the wee body in garments which come to you free from germs—HOSPITAL-SAFE from the danger of skin infection which doctors, nurses, hospitals fight relentlessly. How wonderful to KNOW that when you break open the dainty package, the soft Vanta garment is just as pure as though the doctor or nurse handed it to you right from the hospital sterilizing room. No dread that the terrible germs which cause infection can attack the little body, for germs enter the slightest of skin abrasions—even those caused by chafing.

Washing or wrapping garments in packages won't kill germs. Only heat kills them. So, to keep your baby safe, Vanta Garments are vacuum-steam sterilized for 30 minutes in 250° F. of heat, in exactly the same machine hospitals use. Put them right on without washing.

And yet these Vanta Sterilized Garments, HOSPITAL-SAFE from germs, cost you no more. Ask your store for Vanta Sterilized Shirts, Vests, Binders, Knities, Diapers, Sheets, Pillow Cases.

Then Use Vanta SELF♥HELP Garments
Sizes 2 to 12 Years

VANTA-LACO Sterilized Powder, Sterilized Olive Oil and Pure Imported Olive Oil Castile Soap are best for babies—all of highest Vanta Quality. Insist upon having Vanta—recognize it by the Vanta Baby. If you can't get it, send name of store to EARNSHAW KNITTING CO., Dept. 1003, Newton, Mass.

FREE TO YOU

A copy of Vanta's book, "BABY'S OUTFIT," on care and dressing of Babies; revised edition. A full 64 pages of most helpful information, beautifully illustrated.

Earnshaw Sales Co., Inc.
Dept. 1003, Newton, Mass.

Without charge, now or later, send your book "Baby's Outfit," on care and dressing of babies, and illustrated catalog—all in plain envelope.

Name.....

Address.....

City..... State.....

SALMON IS NEW SOURCE OF OIL CONTAINING VITAMIN D

The discovery of the great value of an adequate supply of vitamin D in the raising of chickens has led many farmers to use large quantities of cod liver oil. This is an expensive item and so the U. S. Department of Agriculture and the Bureau of Fisheries have been searching for a cheaper source of the vitamin. They have found it in the oil derivable from salmon offal, millions of pounds of which are dumped annually into the waters of Alaska. They believe that an oil containing as much vitamin A and half as much vitamin D as is found in cod liver oil may be obtained from this source at a great saving in cost. They are thinking of course of the chickens; yet such are the laws of supply and demand that we may reasonably hope for a cheaper source of these two vitamins for our children and invalids also.

DEPRESSION INCREASES TENEMENT LABOR OF CHILDREN

When regular employment is scarce, child labor and tenement labor increase. This sweat shop labor, for that is really what it is, is present in large abundance today. The bargaining power of the laborers is weak and so little is derived from their long hours of work that even the barest necessities often cannot be supplied. *The American Child* describes such conditions as existing in New York City. In spite of the efforts of the state of New York to enforce the law, as long as the factory work is done in private homes there will be great danger of illegal employment of children.

The pay is so wretchedly poor that even by working until late at night and with the help of the children, one family of six, stringing safety pins on wires, earns no more than three or four dollars a week.

Four cents a dozen is paid for doll dresses that it takes two hours to make even with the aid of a child of 9.

ADULT EDUCATION GROUP

The adult education movement and its several aspects—its agencies, methods, purposes, instruments and trends—represent the problems that the Institute of Adult Education will consider in Spokane, Wash., April 6, 7 and 8, 1932, under the auspices of the Inland Empire Education Association. This organization draws its membership from Idaho, Montana, Oregon and Washington.

Tested and Endorsed
by these
Leading Manufacturers

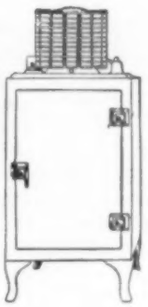
—all recommended Old Dutch Cleanser to keep refrigerators beautiful, and healthfully clean

To preserve the lustrous porcelain surface of your refrigerator, inside and out, to maintain its wholesome cleanliness, these universally known refrigerator manufacturers have specifically recommended Old Dutch as the ideal cleanser for their products. Careful tests have convinced them that this safe, modern cleanser is your best protection against health-endangering impurities that lodge in tiny cracks and crevices; that it quickly removes all dirt, stains and odors. And because it doesn't scratch Old Dutch adds years to the life of your refrigerator.

The only cleanser you need in your home

COPELAND

"We have used Old Dutch Cleanser quite extensively for cleaning the porcelain exterior and interior of Copeland Electric Refrigerators and we are pleased to recommend it for that purpose. We have found that it cleans porcelain surfaces quickly and does not scratch or otherwise injure them."



GENERAL ELECTRIC

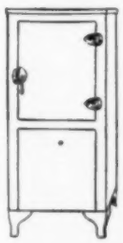
"We have tested your cleaning compound, Old Dutch Cleanser, and find it satisfactory for use in cleaning the interior and exterior of porcelain model General Electric Refrigerators."

KELVINATOR

"For several years, we have used Old Dutch Cleanser and also recommend the use of Old Dutch Cleanser to purchasers of our product. We have found this material very satisfactory for cleaning porcelain, have never found that it caused any damage of any kind to the highly finished porcelain surfaces, and are very glad to recommend it."

WESTINGHOUSE

"After conducting extensive tests of Old Dutch Cleanser on porcelain Westinghouse Refrigerators, we are pleased to advise you that it meets with entire satisfaction."



ZEROZONE

"We are pleased to pass on to you our recommendation of Old Dutch Cleanser for use in cleaning Zerozone Refrigerators—this after witnessing tests confirming the fact that it contains no gritty particles which have a wear and tear on surfaces that should be avoided."

LISTEN to the Old Dutch Girl for particulars of the DIAMOND RING CONTEST every Monday, Wednesday and Friday morning over 36 stations associated with the Columbia Broadcasting Systems at 8:45 A. M. Eastern Time . . . 7:45 A. M. Central Time . . . 6:45 A. M. Mountain Time

Old Dutch Holders, in Color

Mail 10c and windmill panel from an Old Dutch label for each holder

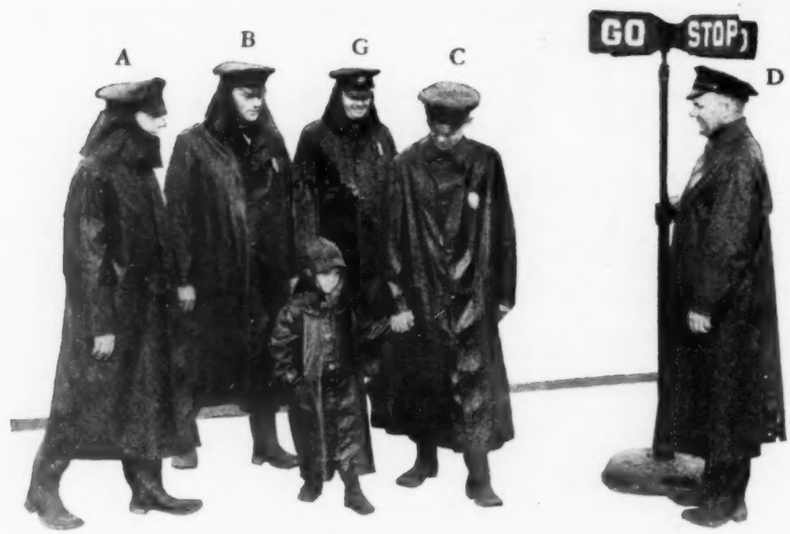
OLD DUTCH CLEANSER, Dept. M8, 111 West Monroe Street, Chicago, Illinois

Please find enclosed.....cents and.....labels for which send me.....Old Dutch Holders.

Colors: IVORY ☐ GREEN ☐ BLUE ☐

Name.....

Street..... *City*..... *State*.....



Keep the Health Squad on the Job

BEWARE of treacherous March with its snow and rain, its slush and mud and penetrating winds—the month when colds are prevalent and the human system is at its lowest ebb of resistance against disease. Now—more than ever—you mothers must do your utmost to protect your children against colds. Call in the Health Squad—those five vitamin policemen A, B, C, D, and G. They will help fortify little bodies against colds and build sound bone, flesh, and health.

Even though boys and girls do not always like those foods which are best for them, foods rich in the important vitamins, there is a way in which all five vitamins can be fed to them in a palatable and easily digested form. Keep Maltine With Cod Liver Oil on hand and feed it daily according to your doctor's directions.

Maltine With Cod Liver Oil is a product especially prepared to aid in building up resistance in children against colds and other diseases, and to make sound bone and flesh. Seventy per cent is Maltine, a concentrated extract of the nourishing elements of malted barley, wheat and oats—rich sources of Vitamins B (b1) and G (b2). The balance is pure, vitamin-tested cod liver oil, the best known source of Vitamins A and D. When fed daily with a glass of orange or tomato juice, Vitamin C is added, thus providing all five vitamins. We have printed a most interesting booklet. It is called "Those Strange Mysterious Elements in Our Food That Prevent Disease." It tells all about vitamins. A copy is waiting for *you*. Write for it today. Address The Maltine Company, 20 Vesey Street, New York, N. Y. (Est. 1875.)

The Vitamin Police

A *"OFFICER A" is the vitamin essential to normal growth and helps ward off colds and other infections which attack the respiratory system. Maltine With Cod Liver Oil is a rich source of Vitamin A.*

B *"OFFICER B (b1)" is the growth-promoting vitamin which also promotes appetite and prevents certain nervous diseases. Vitamin B (b1) (the Maltine vitamin) is found in abundance in Maltine With Cod Liver Oil.*

G *"OFFICER G (b2)" is the vitamin which does so much to keep the skin clear and free from eruptions. It also helps keep the nerves quiet. It, too, is supplied by Maltine With Cod Liver Oil.*

C *"OFFICER C" prevents scurvy. But in children it also plays an important role in protecting and strengthening the teeth. Orange and tomato juice are rich sources of Vitamin C. That's why we recommend that Maltine With Cod Liver Oil be taken with orange or tomato juice.*

D *"OFFICER D" is the "sunshine vitamin." A deficiency in this important vitamin results in weak bones and rickets. Sound teeth depend on it as well. Maltine With Cod Liver Oil furnishes a plentiful supply of Vitamin D.*

Maltine
WITH COD LIVER OIL

Accepted by the Council on Pharmacy and Chemistry of the American Medical Association

STORIES OF CRIME MAY ACCOMPLISH GOOD

On the whole, accounts of crimes printed in newspapers do more good than harm, in the opinion of Dr. Karl Menninger, psychiatrist.

"In the vicarious gratification many receive in reading of crimes, they are themselves satisfactorily relieved of their criminal tendencies," Dr. Menninger said in a recent address in St. Louis.

Dr. Menninger declares that factual accounts of realities cannot be dispensed with in the news, but that the mistake comes when some newspapers and magazines write of crimes as romantic and glorious achievements.

The interest of children in comic strips interests Dr. Menninger from the psychiatric point of view. Most of the humor in comic strips is based on pathologic situations. The characters, being bilked and thwarted, exercise cruelty. Child readers find all of this excruciatingly delightful. In this way, Dr. Menninger believes, they gratify vicariously those baser impulses of greed, hate and cruelty that all children manifest.

ADOLESCENCE IS TIME TO WATCH ATHLETIC YOUTH

The athletic coach of secondary school need not be a brilliant star of a college team. In fact it is far better if he is a trained physical education director who has a knowledge of adolescence and applies it seriously in his relation to his boys. This is the opinion of John G. Lewis, instructor and coach of a Georgia high school, writing in a recent issue of the *Georgia Educational Journal*.

It is the boy in his early adolescence that is most liable to suffer physical harm in team play because of flabby muscles, loose joints and lack of correlation.

Coach Lewis describes the adolescent boy as "impatient at overmuch talk on any subject when the impulse to do things, to dare things, the impulse for activity, adventure and danger is tugging at his heart strings."

The adolescent boy must have an outlet for his energy, and what provides a better outlet than athletics? "The reflex of pleasure and satisfaction is so intense that it amounts at times to almost intoxication. Vigorous play makes the strongest kind of appeal to whole soul and body."

Science without eyes does not convey confidence.—Ambroise Paré.

STUDENT ESSAYS DEPICT RAPID PROGRESS OF MEDICINE

In an attempt to make the people of Oakland County, California, health conscious, an essay contest was held by the Oakland County Medical Society in conjunction with an address by Dr. Morris Fishbein. Esther Stuart and Grace Heitsch, both of the Pontiac High School, won first prizes. The essays depicted man's conquest over the numerous obstacles in the progress of the human race. Keen observation in determining the relation of man to nature and organization of material won these students valuable prizes.

Excerpts from these two essays follow:

"Man is indeed an example of the triumph of one organism over others. The battle between man and germ organisms which has raged for thousands of years continues even today. Against the deadly enemy on one side, we have arrayed man's experience extending over thousands of years, his scientific knowledge of the enemy's deadly powers, and his command of every conceivable mechanical aid which medical progress has produced," Esther Stuart explains at the beginning of her essay.

More specifically, Grace Heitsch begins:

"Mention of frontiers as the advance region of settlement brings visions of clearing away primeval forests. And who can walk through a forest today where tall trees are being felled without being impressed with the immensity of the stroke that lays low those gnarled giants? When standing, they seem impregnable, almost as much a fixture as the rocks on the hillside."

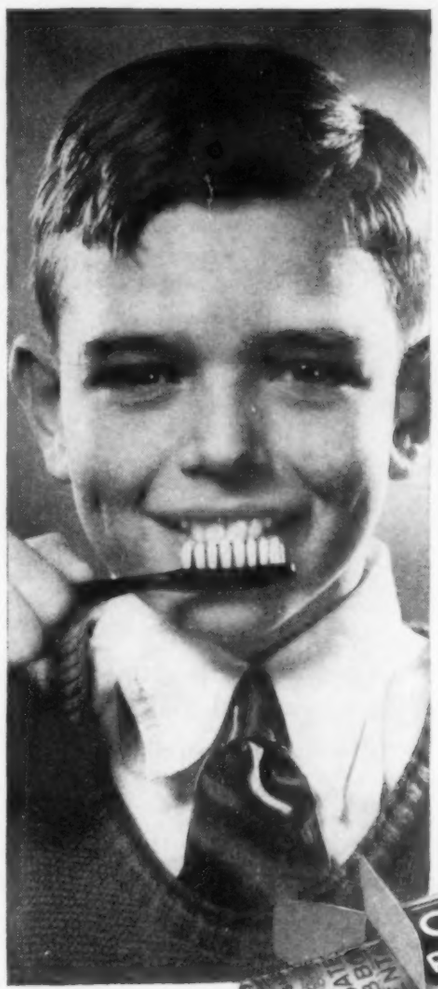
KEEP EARLY TEEN AGE CHILD IN SCHOOL

Much too often one hears a parent say, "I worked when I was 14 and I can't see that it hurt me any."

Child Welfare offers an adequate explanation:

"And what is this lad's work? Errand boy, probably—some such 'arm and leg' job requiring a minimum of brain work. That is all he can obtain at the age of 14 or 15. Employers realize his lack of dependability and judgment, hence can afford to offer him only a 'blind alley job'—one without any real future. Lack of advancement brings discouragement and dissatisfactions which force the child's repressed energies into other outlets —street corner excitements—delinquencies."

"*Heavens!* Buddy must have a girl!"



NO—you grown-ups are wrong again. I'm brushin' my teeth 'cause Ma finally got me some toothpaste I like to use. And if you don't think it's keen—just try some yourself. It tastes swell—and I think a feller ought to have a right to do *some* things the way he *likes* to do 'em. Ma was complainin' the other day to Doctor Brown about me not brushin' my teeth reg'lar and he told her maybe she hadn't given me a toothpaste I like to use, and after all, he said, what a toothpaste is for is to clean teeth, and he said Colgate's would do that as well as anything he knew. He told her she couldn't go wrong buyin' a toothpaste more people use than any other kind. An' . . . I'll tell ya a secret Pa don't know . . . mebbe y' guessed right about the girl. Ma says I kin take her to the movies tonight with the quarter she saved by buyin' Colgate's."

25c

FREE—

First Aid for Mothers!

Here is a tooth-brushing chart which appeals to the child's play instinct . . . and offers a reward for brushing teeth regularly. It is approved by educators and helps you to teach your children the clean teeth habit. Mail the coupon and get this chart—free—with a free trial tube of Colgate's.

ACCEPTED AMERICAN DENTAL ASSOCIATION

This Seal signifies that the composition of the product has been submitted to the Council and the claims have been found acceptable to the Council.

Colgate, Dept. 90, P. O. Box 375,
Grand Central Post Office, New York City

Gentlemen: Please send me samples of Ribbon Dental Cream and Charts for my own .....children.

Name .....

Address .....

City ..... State .....

To build resistance through nutrition— Use Horlick's Malted Milk

ACCEPTED AMERICAN MEDICAL ASSN. Committee on Foods

With its easily digested, well-proportioned, nourishing qualities of rich, full-cream milk, wheat and malted barley, Horlick's is valuable in building reserve energy and resistance to winter ailments.

Horlick's nourishes the body and stimulates the appetite, without imposing a digestive burden upon the patient. It is of unusual value as a light diet during colds and convalescence.

Horlick's Malted Milk, made with either milk or water, is an alkaline food, which is accordingly beneficial in an alkaline diet. It has the added advantage of being very easily prepared.

THE ORIGINAL

MALTED MILK

HORLICK'S

Horlick's Malted Milk Corp., Racine, Wis.

DESIRABLE OBJECTIVES FOR ATHLETICS OUTLINED

What should be the pursuit of physical education in secondary schools? A paper presented by Arthur E. Morr, director of physical education in the public schools of Camden, N. J., at the physical education section of Camden County Teachers' Institute offers twelve valuable objectives, which follow:

1. To establish conditions that will provide greater opportunity for those pupils whose physical capacities are low and for those who are unable to secure adequate exercise away from school.
2. To develop more fully the kinesthetic sense in order that the body may move with speed, ease and grace.
3. To provide sufficient exercise to assist in the proper elimination of substances from the body.
4. To promote a desire for the proper functioning of the neuromotor system at all times.
5. To provide means whereby motor skills may be developed during adolescence for activities in later life.
6. To inculcate interest in play so that as adults they will provide suitable recreational facilities for the upbringing of boys and girls.
7. To create situations that will arouse and control anger, fear, hate, joy, love, gratitude and timidity.
8. To develop through physical fitness a desire to maintain more practical health habits throughout life.
9. To create situations that will not prove harmful to physical well-being.
10. To develop in pupils such traits as courage, leadership and fair play to equip them better to perform the duties required for good citizenship.
11. To provide team work that will result in group consciousness.
12. To develop physical fitness.

LIBRARIES OFFER CLEAR TYPE BOOKS

Does eyestrain prevent you from reading good books? "Books for Tired Eyes" is a list of books just published by the American Library Association; the list is now available at public libraries. Only books with large print are included. For those whose eyesight is unusually poor, the "Clear Type Series" is recommended. The books chosen are of wide range designed to suit all types of readers. Fiction, biography, travel, literature, history, books for young persons and books of general interest are included.

Give the other 9

the health the 10*th enjoys*

HAPPY, laughing, carefree youngsters—you find them playing hard in every schoolyard in the United States. Apparently they are perfect specimens of health. Yet only one of every ten has teeth that are sound . . . free from decay that can so certainly be repaired before serious sickness results.

Checking tooth decay, and thus preventing infection and systemic disease, demands that teeth be given constant care. Daily cleansing is necessary, but not enough. They should be examined regularly, by a dentist.

With x-ray facilities, modern dentistry makes an important contribution to health at every age. Your dentist has *Bite-Wing* x-ray films with which he locates the beginnings of decay—even on the surfaces between the teeth, that cannot be detected in any other way . . . Periapical x-ray films show him root conditions; reveal those areas of infection which so often cause illness. Occlusal x-ray films provide him with information valuable in promoting the proper formation of the jaws.

Periodic appointments with the dentist are necessities . . . they give the other nine the health the tenth enjoys. They should begin in childhood and continue throughout life. Better health is gained and good appearance is preserved.

HAVE AN ANNUAL HEALTH AND X-RAY EXAMINATION

Send this coupon for a copy of the new booklet, "X-rays and Health." It tells how x-rays are used in maintaining health.

EASTMAN KODAK COMPANY, *Medical Division*,
347 State Street, Rochester, N. Y

Gentlemen: Please send me a copy of the free booklet, "X-rays and Health."

Name_____

Number & Street_____

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DRY SKIN!...

Helped Overnight!

Correct your dry skin with Nivea*, the only cream containing *Eucerite**—the cream to make face and hands soft and smooth as sheltered body skin—so good it is used for tender baby skin. Nivea is becoming increasingly popular for general skin care, for night cream, for cleansing and powder base. Try it in tube or attractive porcelain boudoir jar. Ask for the blue and white package at the better drug or department stores or send coupon below for free sample.

*Trade Marks Reg. U. S. Pat. Off.

NIVEA CREME

P. Beiersdorf & Co., Inc. Dept. H3
200 Hudson Street, New York City
Send me a trial tube of Nivea Creme without charge.

Name.....

Street.....

City.....

DEPRESSION CREATES NEW PROBLEM IN DIET BUILDING

The United States responded with generous offerings to the needs of German and Belgian children during the World War. "Nations were struggling to control food, to save food, to stretch food to a degree that the world had never known before," an editorial in *The Journal* of the American Medical Association reminds its readers. The problem is now within our own borders. What are we going to do about it?

Although the situation is not due as in the days of the World War to an actual shortage of food, but rather to the consequences of unemployment and resulting poverty, emergency relief is necessary. What can be done about it?

In cooperation with the work of the President's Organization on Unemployment Relief, the American Child Health Association has made available several pamphlets of sound ideas that will be helpful in giving relief. They are based on the minimum food needs of a child. Most authorities on food stress the necessity of five groups of food: milk, rice, macaroni and similar substances; vegetables, at least two or three; tomato or orange and some other fruit; one choice of egg, meat, fish or cheese; and finally, some cream, butter, oleomargarine, nut butter, bacon or other fat with a little cod liver oil daily.

COOK PORK THOROUGHLY TO PREVENT ILLNESS

Many new instances of trichiniasis have been cropping out lately. Seventeen persons presenting symptoms were reported recently from an Iowa college. A general warning may be beneficial.

Trichiniasis is caused by an animal parasite that infests the muscles of the rat, dog, cat, hog and man. The disease is contracted by man by eating the uncooked flesh of infested hogs. Once these parasites work their way into the intestines of man, they multiply and in less than a month the patient becomes ill with headache, low fever and general muscular pain.

It is almost impossible to detect infested hog flesh by inspection because the cysts are small and they are just about the same color as the muscle tissue. To be safe, no pork or pork products should ever be eaten unless they have been thoroughly cooked, is the warning from the Iowa State Department of Health.

Schools and Camps

Special Schools

PARKSIDE SPECIAL SCHOOL
A day school for exceptional children, 5 to 15 years, who require individual instruction.
MARION B. HERRSCHAFT, Directress
109 E. 61st St., New York City, Phone REgent 4-10130

Schools for Backward Children

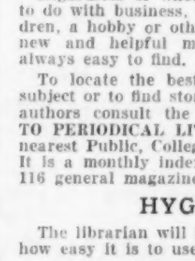
TROWBRIDGE TRAINING SCHOOL
A HOME SCHOOL for NERVOUS and BACKWARD CHILDREN
THE BEST IN THE WEST
Beautiful buildings and spacious grounds.
Equipment unexcelled. Experienced teachers.
Personal supervision given each pupil.
Resident physician. Enrollment limited.
Endorsed by physicians and educators.
Pamphlet upon request.
E. HAYDN TROWBRIDGE, M.D.
1810 Bryant Bldg., Kansas City, Mo.

Beverly Farm (INC.) *A Home and School for Nervous and Backward Children and Adults*
220 acre farm. 7 bldgs. New school gymnasium. 35th year. Industrial and school training given. Dept. for birth injury cases. GROVES BLAKE SMITH, M.D., Supt. **Godfrey, Ill.**

Schools of Nursing

ENGLEWOOD HOSPITAL Be a Nurse. Three year course. State accredited. Beautiful nurses' home. Full maintenance and monthly salary. Four year High School course required. For further information, write to Englewood Hospital, 6001 South Green Street, Chicago, Illinois.

"—AND IN WHAT SCHOOL WERE YOU TRAINED?"
That is the inevitable question when one applies for a professional position. Nursing is no exception. The standing of the school counts. In arranging the announcements of nurses' training schools, the greatest care has been taken to include only schools connected with hospitals of standing. All hospitals on this page are on the hospital register of the American Medical Association. They provide **"TRAINING THAT COUNTS."**



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The library will probably have just the magazines you wish, new or old. If not, we can supply them promptly and reasonably.

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Compilers and publishers of indexes to periodicals
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VENTILATION IS VIEWED FROM NEW ANGLE

Since 1913 the state of New York has studied the problem of ventilation in schoolrooms and auditoriums of public gathering. The point of view regarding ventilation has changed during the past generation. It was believed at first that only bad air was that which contained more carbon dioxide than it ought to, and less oxygen than outside air, an editorial in *The Journal* of the American Medical Association explains.

The modern point of view regarding ventilation is the requirement primarily to remove excess heat given off by the human body and thus to maintain a comfortable atmosphere. Except at times when air contains poisons or dust, the problem is a physical rather than a chemical problem.

This interpretation of ventilation has brought about several important conclusions by the New York Commission on Ventilation:

1. The major objectives of schoolroom ventilation shall be the elimination of heat from the body surface without the production of objectionable drafts. This means the maintenance of a room temperature of 65 F. in corridors, gymnasiums and shops; of 75 F. in swimming pools and adjacent dressing rooms, and of 68 F. in all other occupied rooms.

2. The avoidance of overheating is of primary importance for the promotion of comfort and efficiency and the maintenance of resistance against disease.

3. All classrooms shall have at least 15 square feet of floor space and 200 cubic feet of air space per pupil and shall have a system of heating and ventilation that shall provide means of air supply and exhaust capable of avoiding unpleasant odors and of avoiding, without chilling drafts, an increase of room temperature above 68 F.

4. For the average school, favorably located, window-gravity (open window) ventilation seems to be the method of choice for comfort and economy.

5. Every schoolroom used for instruction, study, assembly and physical recreation shall be provided with at least one thermometer of a grade that will give a reading accurate to within one degree Fahrenheit. The thermometer should be so located as to give a representative reading of temperature at the breathing place of the pupils.

The first wealth is health.
—*Emerson.*

Dr. Logan Clendening says—

"Books by doctors on their specialties clear up medical mysteries for patients."

His comments on two of the new books follow

CONQUERING ARTHRITIS

By H. M. Margolis, M.D. $2.00

"It can be heartily recommended. If all the patients with the disease read the book, it will be a best seller."

(Read also what Dr. Philip Lewin said in February Hygeia.)

HOW'S YOUR BLOOD PRESSURE?

By Clarence L. Andrews, M.D. $2.50

"A cheerful and sensible account of this common condition which is more a natural change of the body than a disease."

GO TO YOUR NEAREST BOOKSELLER OR WRITE

The Macmillan Company Publishers 60 Fifth Avenue, New York

Do You Need

HEALTH MATERIAL?

The American Medical Association has a large amount of authentic health material in the form of pamphlets, posters, lantern slide exhibits, etc. It covers a wide range of subjects. Complete catalogue listing this material with prices will be sent on request.

Give Your Children a Good Start in Life

Now more than ever you will want them prepared for the economic fight of the future. You can help to build sound, healthy bodies.

Science has proved that Ultraviolet light has a definite value for children as a preventative of rickets, and a developer of sound bones and teeth.

Ask your doctor about Ultraviolet lamps. He knows that the Quartz Mercury Alpine Sun Lamp is standard for professional use. And he will tell you that The Home Model Alpine Sun Lamp is the safe way to give regular Ultraviolet radiations that he may prescribe for you or for the children.

Home Model
ALPINE
Sun Lamp

HANOVIA CHEMICAL & MFG. CO.
Dept. 233, Newark, N. J.
Send me your authoritative free booklet "What Everyone Should Know About Ultra-violet Rays."

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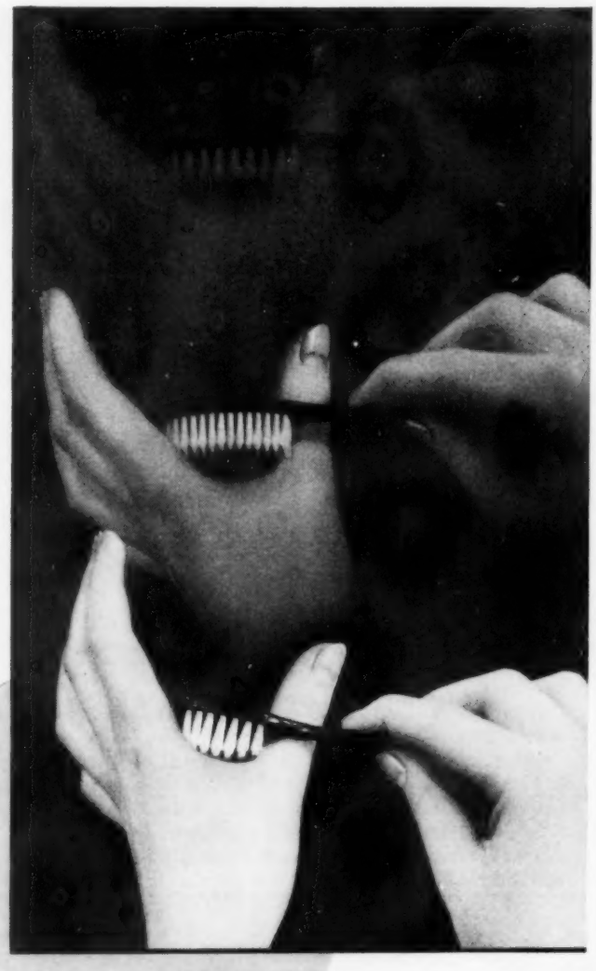
Address_____

City_____ State_____



PROVE IT!

Tek cleans where other brushes can't reach

Clean thoroughly. Clean with comfort. Tek does not crowd. It even fits easily back of your front teeth. Here's an interesting thing to try. Place Tek in the narrow curve of your thumb and forefinger. That's like the shape of your dental arch. See how perfectly it conforms. Bulky brush can't pass this test. Tek speedily cleans all teeth —all crevices. Its BETTER SHAPE and BETTER BRISTLES mean double value at no extra cost. Sterilized, Cellophane-sealed, guaranteed. Children need Tek Jr.

• Johnson & Johnson NEW BRUNSWICK NEW JERSEY •

Tek

the modern tooth brush

CARE FOR APPENDICITIS IN EARLY STAGES OF ATTACK

"From early infancy to old age the march of the acute appendix goes on. Epidemics may come and epidemics may go, but appendicitis is constantly present, indifferent to seasons and to the ages of its victims."

This quotation taken from an article in the *Journal of the Medical Association of the State of Alabama* suggests a problem of major importance.

If examination discloses a true case of appendicitis, the patient should not fool around with medicine and ice packs. The only real cure for appendicitis is an operation.

Highly concentrated diets, with scant amounts of fresh fruits and vegetables, and attendant constipation are contributing factors in the cause. Influenza infection has been followed by appendicitis in a high percentage of cases. Tonsillar infection and fecal concretions also have been known to affect the appendix.

The fact that the mortality from appendicitis has not been lessened in the last ten years has proved that earlier diagnosis by the general practitioner and earlier surgery are the only hopes. The removal of the unruptured appendix is a clean case with minimum danger.

RULES IN CAR DRIVING NEED NATION-WIDE CONFORMITY

Driving a car is a matter of habit formation. Fixed driving rules cause the development of fixed habits by the operator of the car. Once habits are fixed, it is hard to break them in an emergency. Yet the rules and regulations differ so greatly among cities and states that traffic rules are not only confusing but hardly safe, an article in *The Safe Driver* points out.

"Where these rules change from city to city, and state to state; where passing street cars is permitted in one city and prohibited in another; where signalling in one manner is required in one community and differently in another; where speed varies with the communities through which one passes, operators become confused and safe driving habits cannot become established," the article declares.

Good driving habits are fine, but the laws should be uniform throughout the country. Driving is no longer in an interurban state. More and more, continental driving is popularizing itself.

RECENT BOOK EXPLAINS NEW POPULATION THEORY

That "populations tend to increase directly with wealth and inversely with prevailing levels of living" is the contention of Ezra Bowen in his recent book, "An Hypothesis of Population Growth." Professor Bowen has examined nearly 300 works on population growth. He believes that forces and influences operating upon the growth of population may be reduced to two overwhelmingly significant factors, wealth and living standards.

Professor Bowen draws the following conclusions: (1) man does not need to fear starvation caused by overpopulation, because the growth of world population will soon be stabilized at a level perhaps below existing totals; (2) since further increases in wealth will not be equaled by increases in population, "the large probability is that leisure and standards of living will reach levels unimagined"; (3) the white race will prevail; (4) birth control will win official recognition throughout the world; (5) "systematic control of population growth will reduce but will not eliminate the possibility of war; (6) modern poverty springs from overpopulation in the underendowed classes and may be eliminated from human life, and (7) there is no danger that man's future is endangered by any dilution of his biologic reproductive capacity.

PRESCHOOL YEARS HAVE DEFINITE EFFECT ON CHILD

Few parents realize the important part that environment during the child's first years plays in the outcome of all later efforts of informal education. This point has been repeatedly brought out by the White House Conference on Child Welfare.

The surroundings of the preschool child should be pleasing to the eye. The harmony of the color scheme in the child's room, the pictures on the wall and the general symmetry of arrangement all have their bearing in the formation of ideas. Simplicity should be the keynote.

The home that has no books for the young and growing child is lacking in a mighty developmental factor. Pitiful is the child who does not early have the advantage of pictures and reading material.

No public agency should supplant the home life of a child. A mother's touch, her careful guidance are all essential for a child's development.

Now! Clean hands without nagging

—*thanks to this Wash-up Game*

IT WAS quite a trick to get this red-blooded youngster to take clean hands seriously. "Oh! what's the use, they'll only get dirty again!" used to greet mother's weary reminders to wash his hands.

But now the joke's on Jimmie. For not only does he wash up often, but he actually enjoys it!

Every boy—every girl, too—quickly acquires the vital health habit of clean hands . . . when the Lifebuoy Wash-up Chart keeps score.

Cleaner hands—better health

The Lifebuoy Wash-up Chart teaches children why it's so important to wash hands often—*always before meals.* It tells how hands pick up germs from objects they *have* to touch—pets, doorknobs, books, shoes. It shows how Lifebuoy *rids* hands of germs and guards against 27 germ diseases which the Life Extension Institute says hands may spread. Lifebuoy's rich, abundant lather removes *germs* as well as dirt!

A wonderful complexion soap

Lifebuoy's gentle, cleansing action keeps skin clear and glowing. Prevents embarrassing body odor. Its fresh, *extra-clean* scent — that vanishes as you rinse — tells you Lifebuoy *purifies.*

. . .

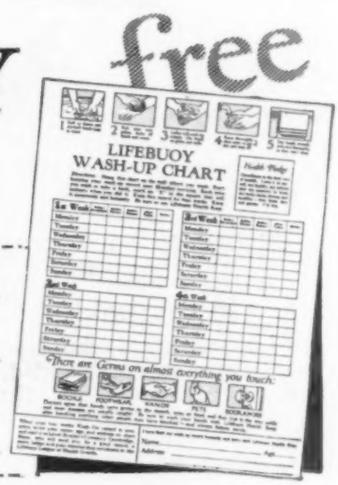
FREE to mothers—Mail coupon below for free Wash-up Charts and trial size Lifebuoy for each of your children and what fun they'll have competing for the highest clean-hands score!

LIFEBUOY

HEALTH SOAP

for face, hands, bath

free



LEVER BROTHERS CO., Dept. 373, Cambridge, Mass.

Please send me, free, Lifebuoy trial cakes and Wash-Up Charts for my_____children.

*Name*_____

*Address*_____

*City*_____ *State*_____

NURSES FIND PIONEER WORK IN COTTON REGION

Cotton picking lasts from October to March in the San Joaquin Valley of California. So in early fall, thousands of migratory people move in almost overnight. Most of these are Mexicans, some are white Americans and a few are Negroes and Indians. Their homes, if such they may be called, consist of one room, usually 12 by 14 feet. Some are only tenthouses.

Low wages, poor food and insanitary living conditions lower their resistance to disease. Education is not only inadequate but old-fashioned. The children spend only a half-day in school and work in the afternoon.

The work of nurses in this region has brought about remarkable improvement in health. Superstition is being replaced by confidence in doctors, nurses and medicine. Many lives have been saved by correct medical attention. The barriers that have to be removed in such a region are so numerous that the work almost seems hopeless, yet there is much that is gratifying when even one case turns out successfully, an article in the *Pacific Coast Journal of Nursing* states.

BELL BENEFITS MEDICAL SURGERY THROUGH INVENTION

In an attempt to save the life of President James A. Garfield, Alexander Graham Bell, inventor of the telephone, developed an electrical instrument designed to locate the fatal bullet. Although repeated applications were made, it was later shown that the bullet was too deeply imbedded to affect the sensitive apparatus, and the president died.

A few weeks later the instrument was so perfected that it was used successfully on veterans who had been wounded in the Civil War. Later, Bell produced a telephone probe for the location of bullets. The University of Heidelberg, in Germany, in later years presented him with one of its rare awards of the honorary degree of M.D. for his contribution to surgery.

WARM, DRY FEET HELP BODY TO RESIST COLDS

Of all parts of the body that should be kept warm and dry continuously, the feet are the most important. Wet feet are among the most frequent factors associated with colds.

DON'T TAKE CHANCES

The danger we can see, we instinctively avoid, but the unseen peril of air-borne germs is a constant threat. It is important that you see your doctor promptly when inflammation or congestion appears in the nose and throat for many dangerous diseases follow in the wake of the common cold. When your doctor prescribes an antiseptic solution and tells you to spray it, get a DeVilbiss Atomizer at the nearest drug store.

DeVilbiss

★ ★ ★

The DeVilbiss Company, Toledo, Ohio, headquarters for atomizers and vaporizers for professional and home use

"HELPS for HEALTH TEACHING"

A gay little brochure in bright red cover giving 100 plans used by teachers and inspired by HYGEIA articles. Teachers may have a copy complimentary by addressing HYGEIA.

NURSING MOTHERS

A MAIDEN FORM BRASSIERE *Created Especially* **FOR YOU!**

Scientifically designed to give you anatomically correct support and to **preserve your figure**—both during and after the nursing period. This Maiden Form brassiere, **recommended by doctors**, enables you to wear the smartest of dresses, with perfect confidence in the trim contour of your silhouette. The breast sections are delicately rubber lined; the front opens easily and quickly. No. 7005, of dainty flesh-colored mesh, is priced $1.50. If your dealer cannot supply you, write: **Maiden Form Brassiere Co., Inc., 245 Y-F Fifth Ave., N. Y. C.**

Reg. U.S. Pat. Off.

The Maiden Form BRASSIERE

GIRDLES · GARTER BELTS

BLIND LEARN OF NATURE THROUGH TOUCH AND SMELL

Children who live in the city learn a great deal about nature by pictures at home and in school, but little blind children in this way are handicapped. Nevertheless, the Perkins Institution and Massachusetts School for the Blind are "opening windows on nature for blind boys and girls," Edward E. Allen, director, writes in *School Life*.

Actual specimens and models that may be handled are used to a large extent in nature study. Stuffed animals, including snakes and monkeys of various sorts and sizes, sundry enlarged flowers and anatomic specimens, shells, crystals and minerals, serve the winter needs, but during fall, spring and early summer the institution grounds supply inexhaustible material of the commonest sort that is real and alive.

The grounds include 34 acres on which grow not only the common trees but also shrubs like lilacs and vines like climbing honeysuckle, planted for their sweet-smelling blossoms and in such abundance that the children may pick them. Flower gardens, kitchen gardens, orchards and a pond of water lilies all aid in making a wonderful source for nature study.

Animals, including dogs, poultry, pigs and sheep, have been pets at the institution. A dog is invaluable to boys, and as to blind boys, it holds even a dearer spot in their hearts.

The blind girl is able to catch dragon flies without even injuring their gauzy wings.

RELAXATION

It is fun indeed to put on speed,
In all the things we do;
A 90 mile an hour gait
Seems not too fast, 'tis true.

But destination plays small part,
In all this speedy motion;
To step on it, and then some more,
Is the controlling notion.

Folks would show some wisdom
If they would stop to ponder,
That pepped up life and habits
Lead fast to "over yonder."

To leave this gorgeous world and life,
Years prior to nature's plan;
Is a frightful penalty to pay
For speed's seductive sham.

So why not use some common sense,
And thus frankly face the facts;
And live with joy and vigor
By learning to relax.

—J. C. F. in *Pennsylvania Health*.

My New Brother

Remember, Mother, if you start my little baby brother on Kellogg's Tasteless, he will always take castor oil without a whimper—no castor taste or odor—no upset stomach—always pure, fresh and full-strength.

The only bottled castor oil in America *sealed* at the refinery. You should love him too much to let him take any other kind than Kellogg's Tasteless.

YOUR SON.

P. S. Insist on the *sealed* bottle. →

Walter Janvier, Inc., New York, N. Y.

KELLOGG'S TASTELESS

NEON GLOW LAMP... for Night Emergencies

A 2-watt Neon Glow Lamp means safety—time saved. Left lighted every night—current costs only a few cents a month. Lasts thousands of hours. Buy it at your local electrical dealer's or write us for folder. General Electric Vapor Lamp Co., 845 Adams St., Hoboken, New Jersey.

EVERY Week is DERBAC Week

Even in blustering March, the weekly DERBAC Shampoo of pure pine tar and cocoanut oils, is *safe* for little heads.

Insures healthy hair, and freedom from vermin and scalp infection.

FREE: Full size cake (20 shampoos) to Physicians and Registered Nurses.

Derbac HEALTH SHAMPOO

CEREAL SOAPS CO., Inc.
Dept. H-3
334 E. 27th Street
NEW YORK

Special Supports for LITTLE TOTS

The tender tissues of little tots call for special supports that, while effective, must not be harsh. This one (No. 98), known as a colitis belt, is an abdominal support which relieves intestinal distension and affords a slight uplift. It is proportioned to age in size and width and regulated to degrees of tightness at the back.

Write for special information.

CAMP

Physiological Supports

S. H. CAMP AND COMPANY
Manufacturers, JACKSON, MICHIGAN
Chicago
1036 Merchandise Mart
New York
330 Fifth Avenue

SAFETY TRAFFIC NEEDS THREE "E's"

The three fundamentals of traffic safety are engineering, education and enforcement, according to the National Safety Council in a bulletin recently issued to 1,500 mayors throughout the country.

"Get the facts about accidents," says the bulletin under the heading of "Engineering." "How many, where, when, how and why did they occur? Analyze the hazards of dangerous locations. Use scientific study, not guesswork, as the basis for new signs, signals, ordinances and regulations."

Under the heading "Education" is this advice: "Tell every child and every adult, every driver and every pedestrian, about accidents and the need for personal caution, observance of traffic laws and support of public officials."

And in regard to "Enforcement": "Get an ordinance that is enforceable. Get police and courts organized to deal with 1932 traffic by 1932 methods. Insist on firm, courteous, impartial handling of all violators.

"Through these three 'E's' your city can reduce the toll of life and limb and win national renown in the National Traffic Safety Contest."

COAST GUARDSMEN RISK LIFE IN SERVICE

None perhaps give more to the interest of safety of life and property than Uncle Sam's coast guardsmen. These men who go down to the sea in ships daily risk their lives. Numerous they are—more than 10,000—who save those in distress on the waters. "Sentinels of the Sea" they are called in an article in *Safety Education*. One thrilling rescue is described as follows:

"One of the greatest rescue achievements of all time took place not long ago when a coast guard crew, stationed off Puget Sound, saved 105 lives in fifty hours. Those rescued were officers and crew of three vessels, driven to near-destruction on the rocks off the coast of Vancouver Island. The ships were the victims of a terrible snowstorm. The wrecks involved insurance risks of over $3,000,000, but thanks to the vigilance of the coast guardsmen, not a man was lost."

The three vessels flashed the following messages to the rescue cutter: "We are afire at sea. Hurry"; "Ship breaking up: we may all be drowned"; "We are floating helplessly against the rocks near Carmanah Light." The Snohomish crew came to the rescue.

SEND COUPON FOR DEMONSTRATION PACKAGE

MOTHER!

END DRUDGERY *in* DIAPER CARE

HERE is good news for mothers—an end to all drudgery and all unpleasantness in diaper care. Dennison's Babypads, the new sanitary diaper linings, used inside the cloth diaper, protect it from customary soiling. Used *once* they are instantly disposed of—simply dropped in the toilet and flushed away.

Babypads also guard against the risk of "diaper rash", as doctors, nurses and hospitals advise. For, even after repeated rinsings, cloth diapers may retain impurities (soap alkalies, uric acids) that cause painful irritations to baby's tender skin.

For Your Satisfaction and Baby's Safety *Insist on* Dennison's BABYPADS

Babypads are made of an entirely new, especially prepared material—downy-soft and always absolutely fresh and clean. The name Dennison is your assurance of their quality and purity. Insist on BABYPADS.

Get Babypads now at department, dry goods and drug stores. 50 for 25c, 250 for $1. Or send this coupon and 2c postage for demonstration package—a full day's supply of Babypads.

AVOID RISK of diaper irritation. Use a Babypad every time the cloth diaper is changed.

Dennison's BABYPADS

Send Coupon for Demonstration Package

Registered U. S. Patent Office—Patents Pending

THE NEW SANITARY DIAPER LININGS

Margaret Booth, Registered Nurse
Dennison's, Framingham, Mass.

Please send me a demonstration package of Babypads. I enclose 2c postage.

Name

Street (or R. F. D.)

City State Q-219

© 1932, by the Dennison Mfg. Co.

Feet Hurt?

If they do, you probably "hurt all over"! But you can avoid this misery if you buy shoes that fit your feet properly. An old shoemaker, J. H. Finn, tells you how to do this, in an article in the April HYGEIA, "The American Foot and Its Covering."

Although he does not recommend high heels, he says that they are blamed for more foot troubles than they really cause. From his wide experience he has discovered that nine tenths of the foot ailments are due to other causes—mainly lack of room!

This is a sensible article by one who knows what he is talking about. If your feet hurt, you will find it worth while to read what he has to say. And if your feet never hurt—well, you're just one of a fortunate few!

Introductory Offer

6 months of HYGEIA $1

Regular Subscription, $3 a Year

AMERICAN MEDICAL ASSOCIATION
535 N. Dearborn St., Chicago, Ill. H-3-32

I am a new subscriber. Here is my dollar for an introductory 6 months of HYGEIA.

Name.....

Address.....

Also in the April HYGEIA:

"**Keeping the Creative Mind Up to Par,**" by Joseph M. Creamer, shows how abundant ideas depend upon a physically clean and exercised body. "**Physicians' Fees and Their Collection,**" by Dr. Douglass W. Montgomery, gives the patient an insight into the financial difficulties of the doctor. Other interesting articles include "**Cross Country Running in the High School,**" by George R. McCormack; "**What Science Knows about Cancer,**" by Dr. Elliott C. M. Cutler; "**Equipping the Nursery,**" by Katherine S. Blakely; "**Conquering Tuberculosis,**" by Dr. F. M. Pottenger; "**Heart Murmurs in Children,**" by Dr. Gustav F. Weinfeld; "**Sanitation Goes Modern,**" by Dr. W. W. Bauer; and a new serial for children, "**Snickles and Snortles, the Circus Twins,**" by Nellie G. Herriman.

SAFETY

I am a Power, a Giant, a King;
He who will follow me wins everything.
I have found Fortune and brought her to men;
I have forced Failure back into her den;
I made the roadway that leads up to Fame;
I teach man how to carve out his name
On History's tablets to stand for an age.
I can make warrior, rich man or sage;
'Tis I who can conquer weakness and sin;
I give the courage that helps men to win.
I quiet sorrow and bring peace to bless,
I hold the keys to the portal Success;
He who will follow achieves any end,
For I, humble Safety, am man's truest friend.

—E. J. Brush in *Transportation News.*

CAKE OF SOAP CANNOT HARBOR GERMS

Did you know that a cake of soap cannot harbor or transmit germs? The process of manufacture and the ingredients make it possible for the cake of soap to be entirely free of bacteria. Furthermore it has been proved by Dr. W. R. Redden in experimentation that pathogenic organisms and spores do not propagate on soap.

In the experiments both new cakes of soap and partially used cakes taken from various sources, such as hotels, machine shops, railroad stations, a sewage disposal plant, various kitchens and public baths, failed to show, on culture, a single living organism.

It must be well kept in mind that the bar of soap differs widely from the common drinking cup, the towel and other public conveniences both in its ingredients and manufacturing processes.

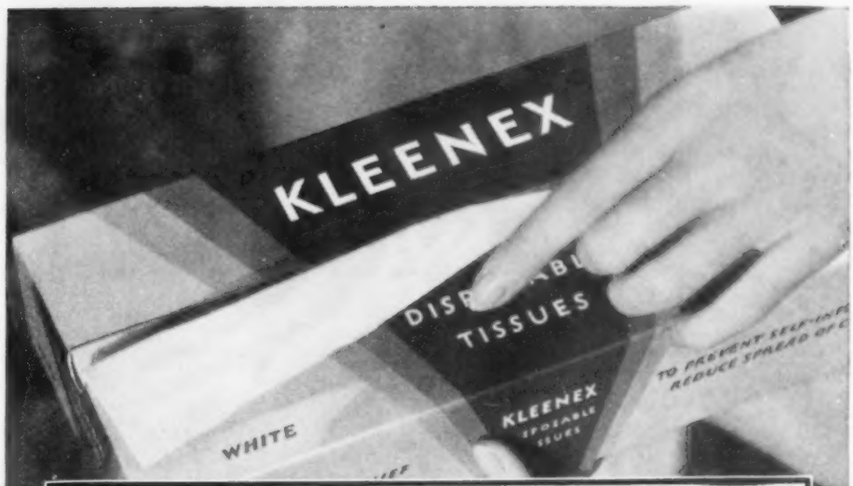
Birthmarks—

SCARS, VEINS, Etc.

My own facial birthmark caused me to discover at last the one perfect way to hide birthmarks, scars, blotches, veins, etc.

My "Covermark" preparation is endorsed by Good Housekeeping Institute and leading skin specialists. Used by hundreds of grateful women and men who longed to solve this cruel problem. A new discovery. Absolutely safe. It will win *your* gratitude. I am no longer handicapped. No need for *you* to be.

Discovered and personally manufactured by
LYDIA O'LEARY
11 West 42nd St., New York, N. Y.
Lydia O'Leary, Ltd., Toronto, Canada
Write to me for free information.



KLEENEX price reduced!

Former 50c size now 35c

Now you can give these remarkably soft, absorbent tissues to the whole family for handkerchief use

MOTHERS—here's great news! A striking price reduction in Kleenex Tissues—those soft, dainty, absorbent squares that you find so useful a dozen times a day.

The regular price of that big box—formerly 50c—is now but 35c. A third less! The same smart, sparkling package! The same number of tissues! The same cloth-like quality! Only the price has been changed.

Prevent self-infection

At this new low price you'll find Kleenex more useful than ever before. Let the whole family use it for handkerchiefs. That's the modern inexpensive way to prevent self-infection . . . to check the spread of colds. Each tissue is used but once, then destroyed. Germs are destroyed, too.

Children prefer Kleenex to linen handkerchiefs, once they try it. It's infinitely softer. Far more absorbent, far more comfortable, too. And just think of the saving! Many sheets of Kleenex can be used for the price of having a single handkerchief laundered!

Don't think there's only one use for Kleenex! Use it for removing face creams, to make beauty care more effective. Use it for applying rouge, powder, for polishing silverware, furniture. And you'll find that it makes the care of infants far easier.

Buy several packages at the new low price. Try *all* of the exquisite Kleenex colors as well as the white. You'll want to keep a package in every room in the house, in the car, too. Sold at all drug, dry goods and department stores.

KLEENEX *Disposable* TISSUES

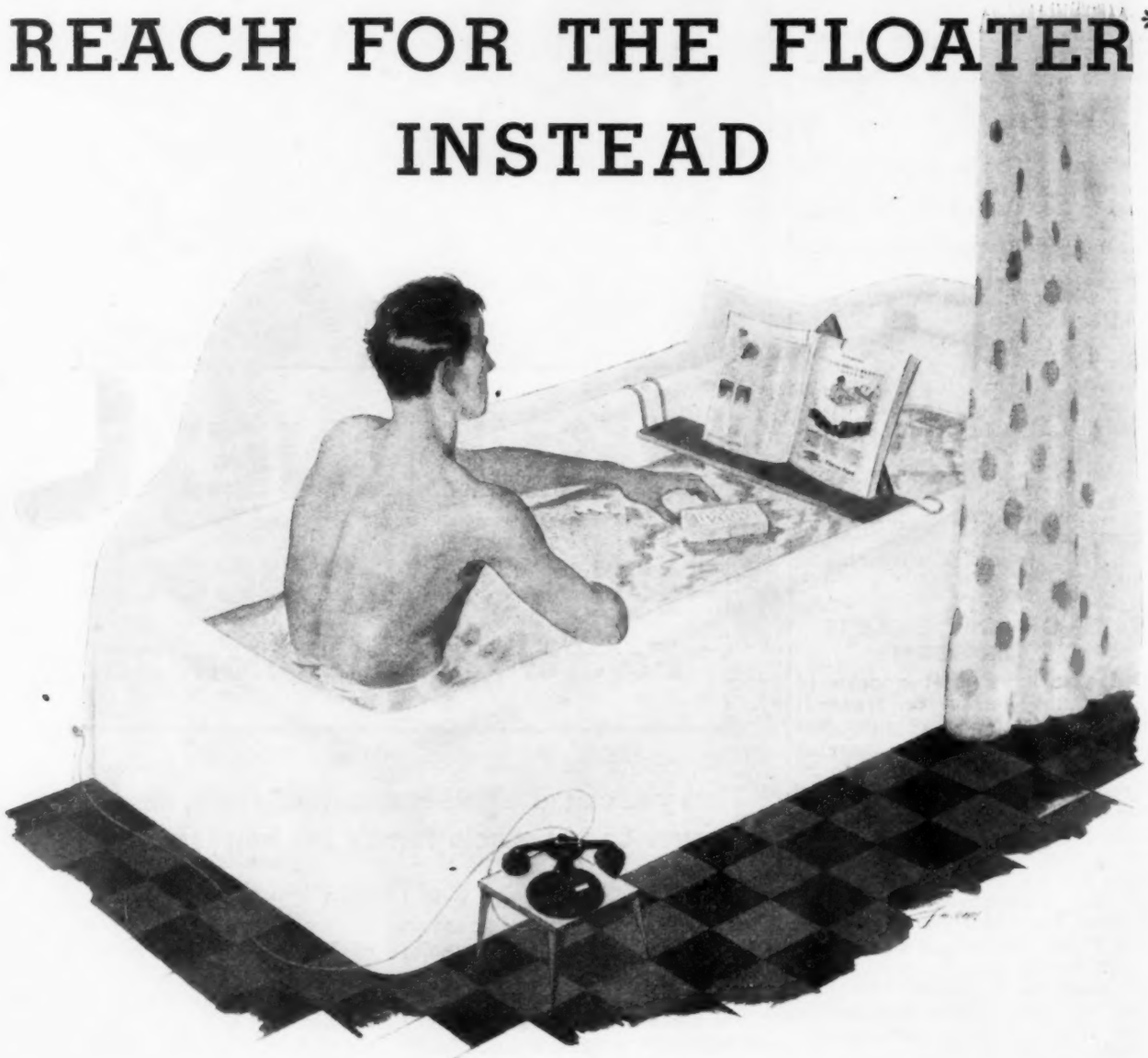
KLEENEX COMPANY HY-3
Lake Michigan Bldg.,
Chicago, Illinois.
Please send sample packet of Kleenex.

*Name*_____
*Street*_____
*City*_____ *State*_____
In Canada Address: 330 Bay St., Toronto, Ont.

Germ-filled handkerchiefs are a menace to society!

Advertising Men

REACH FOR THE FLOATER* INSTEAD



"ADVERTISING men would *walk miles* for the Bath-Soap-That-Floats". "Advertising men *reach for a floater instead of a sinker*".

Even our best friends told us this! But we wanted to be sure.

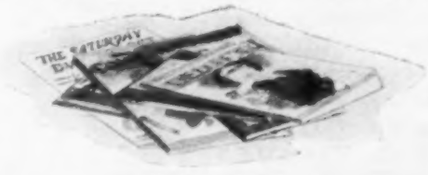
We wrote the 549 advertising managers of America's 549 largest companies. We asked them, "What bath soap do you prefer?" And they rolled up more votes for Ivory than for any other!

Advertising men vote for Ivory—simply because that's the way most men feel about bath soaps.

Most men don't want to strain their muscles or impair their good humor with deep sea diving after sinker soaps.

Most men don't want to smell like the flowers of spring either!

Most men (and most wives might as well know it) warble more cheerfully, relax more completely, in the clean-smelling foam of an Ivory bath—with a big, man-sized cake of Ivory, floating in easy reach.



*IVORY SOAP

99 44/100% Pure · It floats

KIND TO EVERYTHING IT TOUCHES